

AMERICAN FORESTS *and* FOREST LIFE



MARCH, 1925

ANGLING IN ALASKA : : 50,000 FIREBRANDS
THE WIND IN THE FOREST

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The American Forestry Association

Washington, D. C.

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The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

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WASHINGTON, D. C.

L. M. CROMELIN, Assistant Editor

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AMERICAN FORESTS

VOL. 31

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The Challenge of Woodless Lands

*An Address Delivered Before the Fiftieth Anniversary Meeting of
The American Forestry Association*

BY HON. FRANK O. LOWDEN

Former Governor of Illinois

IF A group of men one hundred years ago had had the vision of the men who organized the forestry movement and who have carried it forward, those

lands which today are a burden upon the state and a challenge to the state government would be the best asset of each of these states. It is not too late, of course, to recover some of the loss we have sustained by reason of our neglect of our natural resources; and yet how much easier it would have been if some one, just a generation earlier, had discovered what we have only lately discovered, that there is no such thing as infinity in any of the natural resources of the earth.

A half a century ago we lived as though there were no limit to either our forests or the fertility of our soil. We lived as though every opening just a little farther west would ever have new virgin fields and new primeval forests. Now, lately, we have discovered, much more rapidly than anyone anticipated, that these virgin resources have been exhausted. I sometimes think that we go on living, not with the delusion of our progenitors, but as though the world were coming to an end when we are dead.

One of the things that impressed me today at the meeting of this Association was the fact that all of the thought and all of the planning was for the far-distant future. When we can lift our minds out of the immediate present

and cast them forward into the centuries, then we begin to build better and more permanently than we have ever builded in the past in this country.



HON. FRANK O. LOWDEN
Statesman, Farmer, Forester

There is one phase of the conservation of our forests that I want to comment on very briefly, and that is the growing need of all these woodlands for recreation. One of the greatest scientists that America has produced declared about a year ago that he could easily foresee the day when three hours of labor would yield as large a product as eight hours do now. Scientists all over the world are feeling that they are just on the eve of greater scientific discoveries than any which have marked this marvelous age. They have gotten a glimpse of a power within the atom which we supposed a few years ago to be the ultimate expression of matter. They have a glimpse, so they say, of the power within the tiniest atom which surpasses anything that we have ever known in the way of power; and when they have released that and applied it to the use of man, and when radio, that marvelous discovery of the last few years, shall have found its full

field of work, scientists are expecting that production will be so cheapened that three hours of labor, as Steinmetz said, will be as productive as eight hours are now.

The problem of civilization in the past has been to find leisure for the children of men to develop themselves to

the utmost. The problem today and the problem that will occur in future years is how to teach the children of men to so employ their leisure that they will realize themselves to the utmost. The pleasures today that seem to make the strongest appeal are making many people wonder whether or not leisure is going to realize for the race what it was hoped one day it would. But if we can preserve these open spaces and can get our people employed in the growing leisure which is sure to come to them, so that the tastes of the coming generation shall be for the woodlands, for the open spaces, for the mountains and the streams—if they shall employ that larger leisure which they are to enjoy in these wholesome ways, no one can set a limit to future development of the human race, after science shall have finished this larger work upon which it now is engaged.

So, for that reason, in addition to all of the commercial reasons which have been set out, it becomes imperative that the states, the municipalities, and the Federal Government shall provide a larger playground for its growing population to employ and enjoy its leisure hours in the coming years.

There is another thought that perhaps from a practical standpoint I can say a word upon, and that is the possibilities of extending this forestry movement upon the farms of America. We live here in the most fertile valley, as we think and modestly claim, in all the civilized world. Yet there is hardly a farm in Illinois or Iowa, or any of these Mississippi Valley States, that has not today a few acres of land which are thought not good enough to cultivate and which might well be devoted to the planting of trees. I was amazed to learn from Colonel Greeley that the Census has reported there are 150,000,000 acres of woodlands upon the farms of America. That is two and one-half times as much as the great forest areas in these Great Lake States.

The Census also disclosed the fact that there are 230,000,000 acres additional upon the farms of American which are classified as waste and unimproved lands. Much of these, by all odds the larger part, could be devoted to the planting of trees, and if through the influence

of the organizations which are arousing public interest upon this great subject we could only bring home to the people upon these millions of farms the part they can take in this work, we could solve for a generation or two at least this important forestry problem. I know something about that. I have been interested in it, in a way, upon my own farm. I realize that we have got to have

some change in the methods of taxation before we are going to induce our farmers to set aside their acres in as large numbers as we would like for this purpose. I suggested that myself in this state a few years ago. Our constitutional convention took it up and included a provision to exempt the lands devoted to forestry from taxation. That constitution, however, unhappily, as I think, was defeated, and

under our constitution we cannot make that exemption; but the time will come when a sound policy in this respect will be adopted here and everywhere, I believe. The chief thing to be gained in states like Illinois for the adoption of that policy will be that thereby you will induce the farmers to employ acres that now lie idle and are of no use for the state or themselves.

The argument that that would exempt or withdraw from taxation large bodies of land is chimerical rather than real. As a matter of fact, as the farms in Illinois or elsewhere are assessed today, these idle or so-called worthless acres are taken into account and the tax-bill value is practically the same as it would be if these acres were withdrawn from taxation. But if they were withdrawn upon condition that the farmers must plant those acres to trees, then the farmer would have an inducement to do that, and before we knew it we would have growing forests upon all of these millions of acres that now are idle and worthless.

I have been doing a little bit along that line on my own farm, which is about one hundred miles west of Chicago. A few years ago I planted some pine trees upon a bare hill. I planted them because I wanted to conceal the ugliness of the place. It was a hill near my house. I had no idea of reforestation when I did it; but those trees thrived so well upon that barren knoll that it occurred



Natural History Survey of Illinois

WHITE PINE PLANTED TWENTY YEARS AGO BY GOVERNOR LOWDEN ON HIS FARM NEAR OREGON, ILLINOIS. THESE TREES TODAY, SAYS THE FORMER GOVERNOR, "ARE THE MOST BEAUTIFUL THINGS IN THE WHOLE MISSISSIPPI VALLEY"

The Wind in the Forest

By R. D. FORBES

But the wind is sad and restless,
And cursed with an inward pain;
You may hark as you will, by valley or hill,
But you hear him still complain.

He wails on the barren mountains,
And shrieks on the wintry sea;
He sobs in the cedar, and moans in the pine,
And shudders all over the aspen tree.
— Bayard Taylor.

IT WAS "Uncle Joe" Scott, of Warren, Arkansas, who first introduced me to the wind in the forest.

For a mile or two we students of a northern school of forestry had tramped beside our lanky timber-cruiser guide through a magnificent virgin forest of loblolly pine. Stately yellow trunks, each well separated from its fellows and crowned by wide-spreading branches, had been interspersed only occasionally with patches of smaller and younger timber. Then, almost as abruptly as one steps from one room into another of a house, we crossed an invisible line and found ourselves in a type of forest totally different.

It, too, was virgin forest—that is, no human agency had ever interfered in any way with its development; but

in place of widely spaced trees of great size we now be-
held a host of slim trunks whose dark, almost gray, bark

betokened youth. They looked, and were, very tall, but their slenderness gave them a false appearance of being even taller than the bigger timber through which we had just come. Here and there beneath these slender trees the otherwise level forest floor was dotted by odd little mounds, some four to six feet long, about half as broad, and half as high. Beside every mound was a corresponding depression; for the most part these depressions were, over several acres, all in the same compass direction from the mounds. An unusual number of "lighter knots"—aborted tree branches whose very heavy impregnation with resin had pre-



SHUDDERING THROUGH THE POPLAR TREES



FIFTY YEARS AFTER A HURRICANE. THESE SOUTHERN PINES HAVE GROWN TO SAW-TIMBER SIZE SINCE A TERRIFIC STORM LAID THE ORIGINAL FOREST LOW, IN 1873. THE MAN IN THE FOREGROUND IS SEATED ON A "CLAY-ROOT"



By McKissick, Port Angeles

THE OLYMPIC "BLOW-DOWN," ONE OF THE MOST DISASTROUS KNOWN, FROM THE GROUND. A ROAD HAS BEEN CLEARED THROUGH THE FALLEN TIMBER WITH AX AND SAW

served them from decay and won a name for them by rendering them highly valuable for torches and kindling wood—lay on the ground, sometimes at quite regular intervals, just as they had been left by the slow decay of the fallen tree trunks in which they were once embedded.

"See those little mounds?" said Uncle Joe, "and the hollers beside 'em? Them's clay-roots. When my daddy come to this country, this here was just the same sort of timber that's back yonder. Then, 'long about 1840, five years afore I was born, a harrican hit in here and tore all the yellow pine plumb down."

"Yes, sir, that harrican sure rooted up the timber. Each one o' them there clay-roots is where a tree stood. Up she comes by the roots, diggin' a hole out, just the way you see. The dirt clung to the roots, and when they rotted and the rain washed 'em, it

made these here mounds. Funny, ain't it? You can see them plain after nigh onto seventy-five years."

"But how in time, Uncle Joe, did the timber come back here when all the trees blew down? And why didn't the wind get the trees over there, where we've just been through?" somebody asked.

"Well, the last is easy enough. These harricans don't never cover the whole country. They just plow a strip through the timber clean as a whistle. Sometimes the strip's a hundred yards wide; sometimes again it's half a mile. They don't keep agoing forever, neither. They may give out in a mile, and now and then they go fifty. You can't tell nothin' about what they'll do. I seen one once blow the timber down for a mile straight toward Bill Jones' house, then lift somehow over the cabin, and drop down again yon side for another mile. Bill ain't left off praisin' the Lord or hit a lick o' work since.

'Miracle,' he called it. Most folks 'lowed it was just bad judgment on the part of the Almighty, Bill bein' a worthless hound. But when a harrican comes you better not trust to the Lord or nobody else. You just light out for the nearest clearin'."



WIND-BORNE TREE SEEDS

1. Longleaf pine. 2. The "wing" does not break away from longleaf seed, so that the sprouted seedling, topped by the seed whence it emerged, looks like the arm on a railroad block signal. 3. Western nut pine, or pinon, bears the heaviest seed of all the pines, and the absence of wings does not permit it to travel far in the wind. 4. The twin "keys," or seed, of the maple. 5. Yellow poplar, or tulip tree. 6. The "cotton" of the cottonwood. The seed itself is the tiny speck in each bit of down. 7. The tufted seed of the sycamore, or plane tree. 8. The fruit



A STRIP OF WIND-PLANTED COTTONWOODS ALONG A WESTERN STREAM

"But what about this timber? Where did the seed come from?" persisted Uncle Joe's questioner.

"Huh! Look around you, boy; look around you." The old man pointed to a near-by tree, which no one until then had noticed. "This here wind don't blow down every last one of the trees it hits. Somehow or 'nother she misses one like that there. See how yaller the bark is an' how much bigger the limbs are at the top? That's one of the 'riginal trees that's seeded up this harrican. It don't take any big sight o' trees size of that one to scatter seed enough to make a thicket out o' the whole country. This here was a good jack thicket when I remember seein' it first. Grewed mighty fast ever since, too."

Hurricanes, the mightiest destroyer of mature timber in the South, where they have uprooted or broken down

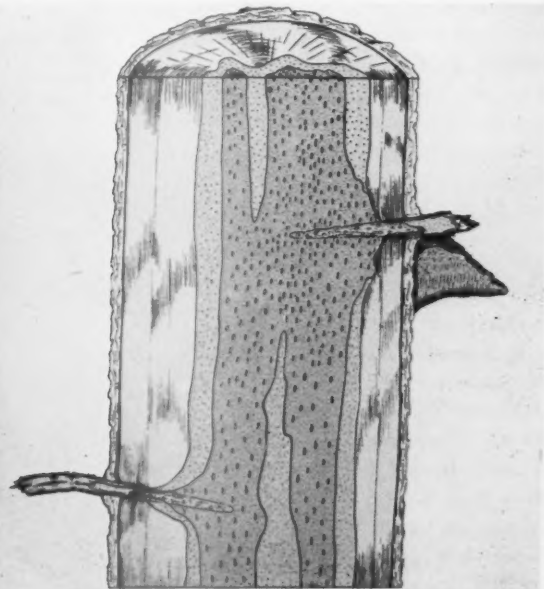


THE SAME WINDS WHICH PLANTED THE COTTONWOODS ALONG LAKE MICHIGAN ARE NOW OVERWHELMING THEM WITH SAND. THEY ARE BURIED PROBABLY TO HALF THEIR HEIGHT

viduals and companies will not be able to hold their timber to full maturity, because of the expense.) As a result,

probably scores of billions of board feet within the memory of the white man, are by no means confined to that region. In the Far West they have occasionally taken their place beside the Red Destroyer as the cause of enormous losses. What is known as the Olympic Blow-down is still very fresh in the minds of the people of the State of Washington.

But there is one apparently hopeful feature of hurricane damage, wherever it occurs. That is the probability that there will be very much less windthrow of young second-growth timber than there has been of virgin stuff. Except possibly on the National Forests, and then only to a limited extent, second-growth timber will never reach the age and size of our original forest trees. (Indi-



Courtesy Office of Forest Pathology

WITHOUT AND WITHIN A DECAYING TREE

At the left is an actual photograph of a lodgepole pine, with a "punk" or mature fungus on it. At the right is a diagram showing a similar tree split open to reveal the rot within. The powdery spores issue from the under side of the punk and are blown by the wind to infect surrounding trees of the forest.

most forests of the future will be able to resist now disastrous winds—even hurricanes. The smaller crowns of second-growth trees and their less isolated position (for young trees, under like conditions, always stand in greater numbers to the acre than old trees) make them less liable to destruction by “the stormy winds that blow.”

But the influence of the wind in the forest is by no means entirely for ill. Were it not for the breezes during the fruiting season, many and many an area which was desolated by ax and saw that mankind might have shelter would today be as bare as on the day it was logged. Were it not for subsequent and gentler breezes the “harrican” areas of the South and West would long remain unfruitful of new timber; for the majority of tree species, and particularly the indispensable softwoods, or needle-leaved trees, depend chiefly upon the winds to scatter their seeds and perpetuate their kind. In fact, their very flowers, that must precede the seed, are largely pollenized by the wind.

The knowledge of this last fact has led some botanists to offer an explanation of why many trees, such as the Southern pines, bear most of their male, or staminate, flowers on their lower branches, and most of the female, or pistillate, flowers on the upper branches. It is generally desirable, they argue, among trees as among animals, to avoid inbreeding. If both staminate and pistillate flowers grew all together on the same branch, or if the staminate flowers were above the pistillate in the tree crown, self-pollination would be almost certain to occur. As it is, the pollen-laden wind is far less likely to blow straight upward past the female flowers on the same tree than it is to waft the pollen gradually upward to the female flowers high in the crowns of surrounding trees. Thus is cross-fertilization assured.

Sealed in the great book of the



THIS BEAUTIFUL, SLOWLY-TAPERING SHAFT WAS FORMED AMONG SHELTERING COMPANIONS, WHICH THE POPLAR OUTLIVED



DOES THIS GIANT SOUTHERN LIVE OAK BEAR OUT THE THEORY THAT RESISTANCE TO WIND STRESSES FASHIONS THE TRUNKS OF TREES? AN ENORMOUS WEIGHT OF WIND-TOSSED BRANCHES IS SUPPORTED ON A BROAD ROOT BASE BY THIS STOUT STEM. A STEEL RAIL, MASTERPIECE OF HUMAN DESIGN, IS NOT UNLIKE THIS IN CROSS-SECTION

past, unseen as yet of human minds (though possibly daily visible to our eyes), are the histories of many once flourishing tree species which have perished from the face of the earth. It is not unreasonable to suppose that some of them were doomed to extinction because their seed was heavy and could not be wind-borne, while that of rival species was light and winged. Certainly today the light-seeded species have an enormous advantage over their heavy-seeded neighbors; for arrogant man throws a monkey wrench into the whole delicate machinery of forest growth when he comes with ax and saw and, alas, fire to strip thousands of acres of forests from the land.

Instead of the orderly processes of Nature (barring hurricanes), whereby a tree here and there dies, falls, and makes way for new growth, sprung from the seed of near-by trees, we have in logging the cataclysmic removal of all or most of the seed-bearing trees at one “fell swoop.” Under modern circumstances, such surviving trees as have seeds light enough to be borne by the wind are, other things being equal, the trees which re-seed the cut-over land. Unless the ground slopes heavily, it is physically impossible for the heavy seed of an oak, for example, to be carried as far by natural forces as pine seed. Where the seed trees are partly pine and partly oak, fortune therefore generally (but not always) favors the pine in the new forest.

Have you ever watched the fall of a pine seed from the tree? It does not drop plummet fashion, but with much dizzy and erratic spinning. It is this spinning which lengthens the time required in falling and gives to every errant breeze an opportunity to whirl the seed far from the parent tree. And why does the seed spin? Because Nature has fashioned a “wing,” or broad and flattened membrane, and attached it to the seed. The drawing shows

By Gasquet, New Orleans

(Continued on page 152)



SALMON LEAPING THE FALLS IN ALASKA—JUSTLY KNOWN AS A PARADISE FOR THE ANGLER

Angling in Alaska

BY PHILIP R. HOUGH

THREE years in Alaska, two of which were spent cruising around in the southeastern panhandle, have convinced me that the angler who likes to fish only "when they bite" can find his paradise in this interesting territory. He can angle away until he is tired physically from hauling them out.

In the course of my work I have visited more than a hundred clear, rushing streams which teem with quantities of trout which are simply beyond comprehension. One will see countless numbers of clear pools which look as if some one had dumped barrels and barrels of fish into them. The bottoms of these pools are literally alive with trout, which always bite well on salmon eggs, and you are welcome to catch as many as you want.

There is no law to prevent you from angling all you please at any time with rod and reel, provided it is not for commercial purposes. As a matter of fact, the Territory of Alaska is delighted to have several varieties of trout destroyed because of their habit of preying heavily upon the commercially valuable salmon. Inroads made by trout upon the salmon are considered so serious that the Territorial Fish Commission has even hired men to kill them. The report of the Commission for the year 1920 states that their employees destroyed 73,648 predatory trout during that year. It goes on to say: "The so-called salmon, or Dolly Varden, trout, together with other predatory fishes, prey upon the eggs and fry of salmon.

Their consumption of eggs is enormous, estimated to be many hundreds each day for every individual during the spawning season. Specimens of stomachs examined showed from 20 to 60 fingerlings, and up to 200 fry have been found in others."

As I think back over the many adventures along those Alaska streams, there is one that comes to mind first. It concerns one of my earliest experiences and the biggest trout I ever caught. One evening we anchored in a small bay and were entertained all night by some bears on shore. Judging from the grunting and snarling, there was a big family of them doing some fishing on their own account near the mouth of a small stream which emptied into the bay. Next morning when we went ashore I quickly came upon the scene of this boisterous party. There was a big sand bar all stamped out flat by the bears, as they walked around, so that individual tracks were only now and then visible. The grass on both banks was all trampled down, and partially devoured salmon decorated the landscape as far back as thirty feet from the bank.

My companion took one look and decided to pack a rifle as we went upstream. We wanted to locate a lake said to be about four miles back in the hills.

The trip up that stream, which was cutting its way for a mile or more through solid marble, was one I shall never forget. In the rapids the marble was kept smooth and bright and it disclosed beautiful streaks of blue against

a dazzling white. Many pools were as spotless as a clean swimming tank, so that the fish loomed up wonderfully.

After climbing up over the rocks for about three miles, we stopped to rest a bit by the most ideal trout pool I had ever seen. There was a big sunken log across the stream, over which the water poured solid and fell some three feet into this deep pool, about twenty feet wide. I watched for a while. There were several big trout moving about. Suddenly I remembered that I had several feet of fishline wrapped around a hook in one of my pockets, so I told my pal that there was too much fun going to waste. Seated on a flat rock near the falls, using a hemlock limb for a pole and a red berry to simulate a salmon egg for bait, I cast above the falls and let the hook drift over. It met with instant response! A shower of spray and a flash of red,

as a big one took it. His first leap was in my direction. In a flash he was right in my lap, and I had my arms around a



A TYPICAL STRING OF TROUT FROM MARBLE CREEK

where we were anchored. He indicated the stream to follow, and two of us decided to look things over. We

Dolly Varden that proved later to be 22 inches long. In the tussle that followed I came out on top, but I found out that a fish that size direct from a cold mountain stream is a worthy opponent. The fish was certainly a beauty. It was in fully ripe condition; the entire belly was bright red and made a gorgeous picture in the sunshine. Unfortunately, this fish had become fat from eating salmon eggs and proved unfit for use.

Do not judge from this that all Alaskan trout are poor. It is only in the salmon streams that they are unfit to eat. Alaska has many trout that cannot be surpassed. Splendid trout for the pan may be caught where they are landlocked above falls impassable to salmon.

Another interesting experience came about from hearing a prospector say that there were fine trout in a lake up in the mountains, above the cove



"THE MORNING AFTER THE NIGHT BEFORE." PARTIALLY DEVoured SALMON ALL OVER THE LANDSCAPE, AND THE GRASS ALL TRAMPLED DOWN IN THE SPOT WHERE THE BEARS HAD HELD THEIR BOISTEROUS NOCTURNAL FISHING PARTY

rowed ashore, found the creek, and plunged into the "Devil clubs." In a short distance we came to a double falls, where two streams met, each plunging into the same pool. According to instructions, we followed up the right-hand stream and started to climb the mountain. For about 600 feet that stream was a succession of small falls, three to fifteen feet high, and so close upon each other that the stream became practically a cascade, impassable to any fish. At about the thousand-foot level we came to the first considerable reach, or level water. Another half mile brought us to a small lake that was a gem for beauty. It was surrounded by green timbered slopes, except for the gorge which formed its outlet. This lake was nearly round and about 300 yards across. The shores were shallow, with lily pads in profusion around the edge for some forty feet. Wading out, I cast over the pads toward the center of the lake, which was deep and clear. A dozen casts of a salmon egg produced nothing, so I moved my location, cast several times, and hooked a little trout about eight inches long. When I got my hands on him, I saw at once that he was different from any trout I had ever seen. The most noticeable difference was that the cheeks, or gill covers, were golden. No piece of burnished gold could have been prettier. He was clearly a pink, not a black-spotted, trout. His back was very darkly mottled. The belly of this fellow was white, but thickly covered with small black dots about as fine as grains of pepper. All the fins, including the caudal or tail, were of a solid deep carmine color, and the white margin on the pectorals, so noticeable in the brook trout, was lacking. The two of us caught 52 specimens, and the marks described were true in every case. The largest specimen was thirteen inches and the smallest about five inches in length. They were fine pan fish, with pale, pinkish flesh. The heads seemed blunter than those of most trout.

As a matter of interest, I was telling an old Alaskan friend, whom I met later in Oregon, about these trout, and he said that he had caught many of them through the ice in winter, in a similar lake, about a hundred miles from the one in which I fished. His description and mine tallied exactly, particularly as to the golden cheeks.

Getting away from the coast and into the interior coun-

try, one finds that grayling replace trout in many of the streams. To my mind, these grayling cannot be surpassed as pan fish. It was my good fortune to throw the first hook, so far as any of our party could tell, into a very small stream in the sparsely traveled country about fifty miles north of Mt. McKinley. Standing above a falls of about twelve feet, I slowly let my line straight down to the deep, rocky pool beneath. When still some two feet from the surface, I got quite a kick when at least a half

dozen good-sized grayling leaped at once for the fly. All missed it. Next time I let the fly down faster, so that it struck the water, and quicker than I could tell of it had one hooked. The first grayling was the largest, measuring fourteen inches, and gave as good a fight for his weight as any trout could furnish. The trailing elongation of the dorsal fin was about six inches long, which gave an odd appearance to Mr. Grayling; otherwise he had about the same build as a trout. Other grayling followed this one, as fast as I could get that fly down to the water. These I confined in a small pool beside the stream, later carrying them alive in a bucket to our camp near by. At camp we built a corral of rocks in the stream and had fresh grayling on tap whenever we wanted a change from Caribou steak. I kept about two dozen fish in the corral, and when we broke camp, released

them into the stream. I was told several times up there that the grayling can freeze up over winter in the streams and thaw out alive in the spring. I cannot vouch for the truth of this statement.

In addition to these fresh-water fish, there is considerable good angling in salt water. In the spring of the year many King salmon are caught on spoons and also on herring bait by trolling in certain waters. A great many are caught by commercial trollers, but their gear is so heavy that the operation loses its sporting aspect. The average troller has out twelve spoons on four lines, each nearly the diameter of a pencil and weighted with sinkers weighing six to twenty pounds. These submerge the spoons many fathoms deep. The Coho, or Silver, salmon also takes the hook, but the King, Chinook, or Spring salmon, as he is variously called, is the choicer and comes in two varieties, known as the Red King and the White King.



A PAIR OF ALASKAN TROUT—TWO BEAUTIES—
A DOLLY VARDEN ON THE LEFT AND A CUT-
THROAT ON THE RIGHT, AND EACH JUST
EIGHTEEN INCHES LONG



THE STILL BEAUTY OF MENDENHALL GLACIER REFLECTED IN THE WATERS OF GASTINEAU CHANNEL. ALASKA'S CHARM IS POTENT—FOR ARTIST AS FOR ANGLER

The former is worth about two cents a pound more than the latter to the commercial interests.

In many places there are salt-water bass which take the hook fast and furiously. I remember once standing on a float in Warm Springs Bay, casting for bass. I would cast and one of my men would try to count ten before

I had one hooked. Four times out of five I would beat him. These bass were small. Only occasionally could I land one which weighed a pound, but their fight is furious for their size. They make a delicious breakfast when soaked over night in brine. Yes, Alaska is a place where an angler can get them to his heart's content.



THE LAKE'S LOVE SONG

BY SUSAN THEW

You are indeed a mountain beloved of sun and wind,
 Deep-rooted in the ages, a part of Nature's plan;
 And I, the lake against your sturdy side close pressed,
 Reflective of your thoughts, secure, your arm my span,
 Your sun my sheen, your storm my waves, your peace my rest,
 Your snows my ice, your rains my fuller brim;
 The moon- and star-lit nights a glory which we share,
 Caressed alike by day's sweet dawn or setting sun from Him.



JUST BEFORE THE DUNE PEOPLE GO TO SLEEP

THE DUNE PEOPLE

By William Thompson

I HAD known the Dune people for a long time, but, not being interested in their affairs, had made no effort to acquaint myself with the happenings of their daily lives. I had seen them sitting on sand hills in groups, and wondered what could be the cause of the gatherings. I had also seen some of the older members of the settlements wander alone on the white, shifting hills that change their forms after each succeeding storm. Like the Sahara Arabs, they choose the elevations and gather there, rather than in the spaces between the sand mounds, where they would be protected from the chaffing winds.

There are two families: the Spike, who in springtime wear pearly floral plumes, and the Spray, more sombre in their dress; and, like other communities where there is a mixed population, they keep quite apart in their domestic affinities. The aged, who have survived the storms of life, keep to themselves, and seem in no way interested to mingle with the members of the younger generation, who enjoy the congenial diversions and social pleasures of youth.

Gossip is not a stranger to the Dune people, for often I have seen the elders, tall and bewhiskered, standing aside deep in subdued converse—the topic, the latest scandal, the misconduct of a young Spike who had disregarded the admonitions of a fond parent, or, terrified by the wind, had swished his green, fibrous arms against the cheek of a youth who had resented his attack by retaliating in kind, when the wind changed his mood.

Gales had eroded waves of sand, leaving a prominent projection, over which squattered in irregular abandon all kinds and conditions of Dune people. The elder Spike family, tall and sinewy, stood in despotic poise above the heads of the children, who sat in silence viewing the surf and the sea, which spread its blue mantle as far to the east as their eyes could penetrate.

Along the plage were scattered shells of numberless shapes and colors, and on the edge of the Dune lands were sea mosses and marine vines, creeping like serpents toward the domain of the Dunites, who seemed to resent the intrusion by waving their arms in threatening gestures.

While brooding over the lives of these seaside denizens, as if to blot from my vision the picture of cheerless isolation, the fog sprites swept in from the mist grottoes of Neptune and shrouded my Dune children with a garb of white, soon to call the night to lull them to sleep with the crooning songs of the sea.



"GOSSIP IS NOT A STRANGER TO THE DUNE PEOPLE"



"DUNE PEOPLE SITTING ON SAND HILLS IN GROUPS"



"OLDER MEMBERS WANDER ALONE ON THE WHITE, EVER-SHIFTING SAND HILLS"



"FRATERNIZING OLD DAMES SQUAT ON THE DUNES WHILE THE PALM PEOPLE STAND IN SILENCE"

50,000 FIREBRANDS

By E. T. ALLEN

As one of the most graphic and impressive word pictures of the national menace of forest fire ever written, this statement by Mr. Allen, made at the fiftieth anniversary of The American Forestry Association, in Chicago, on January 22, is a challenge to patriotic America.—EDITOR

WHEN human distress comes to our eyes or ears, we act first and argue afterwards. I wish there were some way to get good, warm human emotion aroused to its proper place in viewing the forest-fire picture.

To all too many in this land, and all too often, the picture is a vivid one, and human above all else. There is no more pitiful thing, I think, than the settler's family, after years of privation and incredible labor, surveying, without food or shelter, the blackened ruin of all their hopes, or fleeing in refugee trains they know not whither. And sometimes the unburied are left behind. I wish this Association and our lawmakers might see this once.

There is no more discouraging thing to little pioneer communities than to face the winter with crops, schoolhouses, and bridges gone, even though they may have saved their homes and lives. Have you ever talked with them?

There is no greater hardship and exhaustion, unless in war, or sometimes at sea, than that of thousands of sleepless and smoke-blind fire-fighters, every year, while the rest of us are seeking summer pleasures. Have you ever seen them?

There is no more terrifying thing to witness, unless it be volcanic cataclysms, as at Katmai or Pompeii, than the roar and crackle of an advancing fire-front, or the blackness of midnight at noon, and navigation impeded for miles at sea, caused by the settling smoke from scenes that in the darkness we can only imagine. Have you ever had this experience?

I suppose these things are not as important economically as the less-spectacular eating away of national prosperity by countless wealth-destroying fires from coast to coast. But to me it seems as though they lay a heavier charge against the man with the firebrand, and against all of us who have public responsibility. Not one of us, perhaps, but can lay on other shoulders greater responsibility than ours for stewardship of the country's resources. But on whose shoulders shall rest our personal callousness or lack of effort, when, as surely as seasons come and go, this means to many, this year and next, impoverishment, suffering, and death; when it means many another Wallace, Hinckley, and Cloquet horror; when it means harder conditions of life for all our country's children? We think too much of fire as an abstract force of nature, and of its results in terms of economic loss; for, although human nature is mercenary enough, it does not arouse to deal with such abstractions as it will when it realizes that the cause of fire is human dereliction, and that its consequence is human suffering. . . .

We have about 50,000 recorded forest fires a year in the United States; 200 to 300 new ones a day during the drier months, with thousands burning simultaneously during much of the season. . . .

Our annual fire bill is well over \$500,000,000 a year, but for round numbers call it that—half a billion—all reckoned on the average year, not the worst, and on present forest conditions, as though everything were replaceable by opening new fields, without considering the incident cost increases and distresses of future forest shortage. Half a billion dollars a year already; growing

because values involved are growing; and very largely, if not wholly, preventable! I still say that whether or not this represents sufficient attack on our prosperity to be called a national menace, the mental processes that are content to let it go undealt with are a menace to any nation.

If riot or invasion should sweep this country, killing unprotected settlers, plundering banks and treasuries of \$100,000,000 of the people's savings and business capital, and, by destroying the basis of commercial enterprise, reduce our income by hundreds of millions more, the catastrophe would startle the world. If this disaster should threaten to recur the following year and every year thereafter, annually taking half a billion dollars from our people, par-

alyzing our industries, threatening future famine, and, worse still, destroying by millions of acres the very productivity of our lands, which alone can avert it, the situation would be unbearable. It would dominate every mind. All else would be forgotten in preparation for defense.

Such a parallel is fair. Although less spectacular, forest fire destruction is as real as that of such a riot or invasion. And it is more far-reaching in effect on future prosperity. So far, we have pictured only its current sacrifice of wealth, life, and happiness.

There remains to be appraised and faced its sinister threat against every forestry step this Association advocates, every purpose of forestry reform, every forestry investment, whether private or public; every attempt to assure this country a wood supply or to keep its forest land surface a sustaining national asset. . . .

Suppose that by their own reasoning, or by our missionary work, or by the mandatory laws that some people propose, there should be created tomorrow a body of 50,000 forest landowners, well distributed throughout the country for the sake of their example, and pledged to do all that anyone could ask them to do to perpetuate the forests under their control. Suppose, further, that every state legislature has removed the obstacle of discouraging

taxation. Do you realize that as long as we have 50,000 forest fires a year, there is, for every one of these owners to engage in forestry, another man with a torch waiting every year to destroy his enterprise? . . .

Our present achievement in the forest-fire line being 50,000 fires and 10,000,000 acres burned over, we are averaging 200 acres to the fire. Each, then, averages two-thirds of a mile in diameter. Lining up the 50,000 so they touch, they extend 32,784 miles; so each year we run ten lines of fire, each two-thirds of a mile wide, across this country from coast to coast; and if we cut out the prairie and farm country, keeping these lines in the woods, it will not take very strong winds to drop sparks anywhere between them.

This is the handicap we place on every public and private agency we have the effrontery to hold responsible for the perpetuation of American forests, and to criticize for their negligence. We accuse the lumberman because he does not face this handicap and still try to provide more material for the national bonfire. We maintain forest schools to produce foresters. We ask the taxpayers to finance public forests. We expatiate on the requirements of silviculture and discuss laws to make them compulsory. We even get a national law that does recognize the true situation and authorize the Government to co-operate in dealing with it. But the appropriation we make for doing so is in keeping with the spirit of a 50,000-fire country. A nation's spirit lives not in its laws, but in its songs, and ours is "Keep the Home Fires Burning." We shall have 50,000 of them again this year. Our progress will be in fighting them a little harder and more skillfully. The 33,000-mile fire line may be only half a mile deep, instead of two-thirds of a mile. If I have succeeded at all in making a picture of this national menace, you may be sure it will be well lit for all who are not blind to see.

Now, as to the solution: If I had minimized the seriousness of the situation, this would be easier for me to discuss; but the worse the situation we are in, the more decisive must be the selection of some most promising way out, this although there are other ways to be kept open if we may. My proposal in this instance is a centering of much nearer nine-tenths of our effort, if fire prevention is nine-tenths of forest perpetuation, upon the definite task of arousing the American people to fire consciousness. . . .

We continually overlook what is still more urgent and much harder to accomplish—the eradication of a national propensity to set the woods on fire. We divert our own and the public's minds from this by a scattering campaign for everything else, which is all right in detail, but all wrong in proportion.

Even in our campaign against fire we do this by making people visualize fire itself as their enemy. This is an ineffectual conception. It probably leads to support of others' activities; also reduces the sum of carelessness; but, after all, it only sprays and quarantines, as it were, indirectly and aimlessly against the fostering of a blight. It does not operate in time and place to arrest anywhere near enough of the 50,000 hands that fire the forest every year.

All that will do this is a consciousness that says to the offender, "Thou art the man!" Our problem is not a fire-hunt but a man-hunt; before the fire if possible, but in no case abandoned until

he is eliminated. Not fire, but the owner of the hand that lights it, is the public's enemy. In his heart, and that of his wife and child and neighbor, and of the officer of the law and the judge on the bench, and of editor, legislator, and man on the street, there must be the knowledge that his hand has been set against society as surely as that of the pervert, the killer, and the thief.

No excuse alters the fact of this. He may plead thoughtlessness instead of depravity, but this does not compensate his victims. In the degree that they are more numerous, that his carelessness strikes more homes, it is a greater crime. As a rule, it is more than carelessness. It violates the law.

We have precepts as old as the Commandments against murder and theft. They have influence, no doubt. But for protection against those they influence insufficiently we invoke the law, and that this may not falter, we add the contempt of decent citizens for those who break it or condone. It may not

be otherwise if precepts against fire are to govern human conduct. But it is not so in America, else all but a bare handful of our 50,000 annual violators would not go unpunished, accepted on equal terms by their fellows, to strike again next year with neither fear nor shame.

I do not undertake here to outline the complete program of dealing with the fire evil, most of which is as familiar to you as it is to me, but only to urge a campaign against its cause. Because this is belated, it will be difficult. Because it is belated and difficult, it calls for action more decisive and vigorous than any we have attempted or, as far as I can see, is being contemplated.

I would, in every budget in this land for forest protection, devote not less than 5 per cent—sometimes more—to education against the starting of fire. You need not tell me that \$325,000, or this proportion of our average six and a half million expenditure, would not, if skillfully used, cut down the cost by a far greater amount and save tremendous loss besides. It is an indefensible system that leaves preventive education, in a situation such as I have described, to a haphazard experiment now and then with what funds it is felt can be spared from fire-fighting.

Has it ever occurred to you that we are the best fire-fighters in the world, of which we are inclined to boast, just because we lead the world in permitting fires on which to practice?

In this educational effort I would not abandon other arguments, but would for a time, until none has any possible excuse that he never realized it, make the campaign center on personal responsibility and the crime of fire setting and fire toleration, whether the form involved be willful incendiarism or the carelessness with match, cigarette, camp fire, locomotive, land-clearing or logging fire, or maintenance of fire-traps, that has precisely identical results. And note that toleration is included, meaning that personal responsibility attaches to him who condones, clear up to the legislator whose paring of an appropriation that is shown to be needed is not economics, but his response from a swivel chair to the plea of men, women, and children who face those 33,000 miles of flame.

Secondly, . . . I would police the woods in a way they have never been policed, not leaving the law to be taught and enforced by forest firemen, however splendidly chosen and trained for the technique of their own profession, but providing as many as need be of men equally chosen and trained for the different and

(Continued on page 172)



THIS IS A NORMAL FRUITING BRANCH OF A HEALTHY YOUNG COTTONWOOD. THE TATONES, OR PODS, ARE RIPE AND READY TO BURST

Making the Cottonwood Be Neat

How an Effective Method Was Found to Stop a Tree's Obnoxious Habit of Scattering Cotton Throughout the Neighborhood

BY W. H. LONG

IF YOU are on speaking terms with the cottonwood tree, you know that it has a well-earned reputation as an untidy citizen. Among its several irritating shortcomings is that of shedding cotton during a certain period of the year, irrespective of its surroundings and the proprieties of the season. In some cases this habit amounts to a public nuisance. This is particularly true of the tree in the Southwest, where the native cottonwood (*Populus Wislizeni*) is very common and most prolific in its production of cotton.

A few years ago the writer was sent to Albuquerque, New Mexico, to study ornamental and forest-tree diseases in that section of the country. Walking along the streets of the city one morning, he noticed a large number of beautiful cottonwood trees freshly blazed on their trunks with an ax wound. Upon inquiry he was told that these trees bore such an abundance of cotton that the city officials had condemned them as a public nuisance

and had sentenced them to be destroyed outright or pruned back so severely that their cotton-producing proclivities would be quieted for several years. The owners of these designated trees, which were the pistillate or cotton-bearing trees, were expected either to cut them down or to

trim their tops and branches until they looked like the stark, stricken forms of desert cacti.

It appeared to the writer that this heroic treatment might not be necessary. The cottonwood, with all its faults, is an asset to the Southwest, where only a few varieties of trees will thrive. It was apparent that, even though all the trees were not felled outright, the heavy pruning was rapidly destroying both their lives and their beauty. How to make them be neat in taking care of their cotton crop without virtually subjecting them to capital punishment seemed, therefore, to be a tremendously important problem. A series of experiments were undertaken. The most promising solution seemed



THE OPENED CATKIN, FROM WHICH THE ABUNDANT AND REALLY BEAUTIFUL COTTON BURSTS FORTH

to be by the use of sprays, rather than by the use of ax and saw. The native cottonwood belongs to a group of trees which bloom before the leaves open in the spring. The trees are of two kinds, male and female. The female bears the flower, which later produces pods, or "tatones," in which the cotton is formed. These cotton-bearing trees are known as pistillate trees, and it is through the cotton which floats the tiny seeds into the air and scatters them over wide areas that Nature perpetuates the species. The male, or staminate, tree does not produce cotton, and its blooms are purplish in color until the pollen is discharged. The blooms of the cotton-bearing, or pistillate, tree are greenish and it is, therefore, easy to distinguish them at blooming time.

If a spray could be found which would destroy the blooms of the cotton-bearing tree, the problem, it appeared, would be successfully solved, provided the spray would not injure the rest of the tree, the lawn under the tree, the paint on adjacent buildings, or the workmen using the sprays; and provided, also, that the cost would be nominal and the spray simple and practical to apply.

A series of indoor tests were first made, by placing branches bearing blooms, in the various stages of development, in jars containing water and sprayed with different solutions. These tests soon determined what sprays would be efficient in destroying blooms. Then outdoor tests were made by spraying trees with the most promising solutions.

As a result of these tests, a solution of sulphuric acid was found to meet all requirements. A 1 per cent solution, when thoroughly applied on the blooms, will kill all of them. A 2 per cent solution, however, is better, because it will kill flowers which have not been entirely cov-



A POLLARDED TREE. HERETOFORE THE ONLY SUCCESSFUL METHOD OF CONTROL HAS BEEN SUCH SEVERE PRUNING THAT THE TREES ARE LEFT STARK AND STRICKEN, LIKE FORGOTTEN DESERT CACTI

ered with the spray. Twenty-four hours after spraying with the sulphuric acid solution, blooms of the cottonwood are wilted and practically killed.

The spraying should be done between the time the catkins appear and the leaves are unfolding—a period of about three weeks. Equipment similar to the power sprays used throughout the East against the elm leaf beetle is well suited for spraying the cottonwood trees. The sprayer used on the work in question is a triplex force pump with three cylinders and giving pressure of approximately three hundred pounds per square inch. The porcelain-lined cylinders which are used on the ordinary pump proved absolutely useless with the sulphuric acid solution, but this difficulty was overcome by using copper alloy cylinders. The same alloy should be used for the base and all parts of the pump which come in contact with the acid solution.

Two men are required to do



THIS TREE HAS BEEN SPRAYED ACCORDING TO THE NEW METHOD AND THE COTTON-BEARING PODS DESTROYED WITHOUT HARM TO THE FOLIAGE



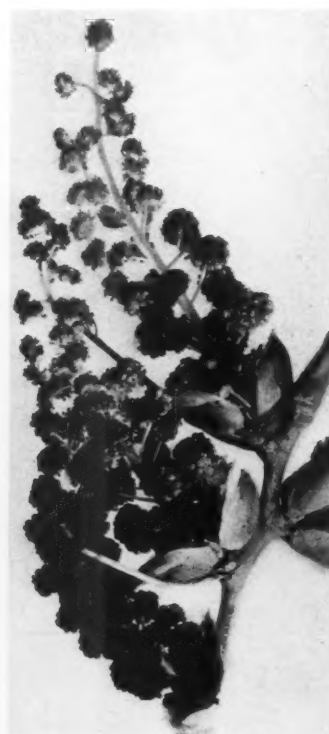
THESE ARE THE BUDS OF THE COTTON-BEARING, OR PISTILLATE, TREE, MUCH SMALLER THAN THOSE OF THE STAMINATE TREE



STAMINATE CATKINS, SHOWING UNOPENED BUDS. NOTE HOW MUCH LARGER THEY ARE THAN THOSE OF THE PISTILLATE TREE



COTTON-BEARING CATKINS JUST BURSTING THEIR BUDS



STAMINATE CATKINS WITH POLLEN PARTIALLY DISCHARGED

the spraying, the second to operate the gasoline engine and direct the man doing the spraying. The time required to spray a tree sufficiently to kill its blooms averages from seven and a half minutes to ten minutes, depending upon the character of the tree, its location, and other factors. Eight to fifteen gallons of the spray solution was used per tree. The total cost of work, exclusive of gasoline for the engine, ranged from 21 to 32 cents a tree.

At a cost considerably less than trimming a tree, this spraying solution will correct the cottonwood's bad habit of scattering cotton to the four winds. Its use eliminates injury and final destruction of the cotton-bearing trees, and the solution can be applied cheaply and quickly. The spray is also valuable for use in destroying the blossoms of other trees which bloom before the leaves put out.

If you have a tree which is untidy during its flowering season, give it a shower bath of a 2 per cent solution of sulphuric acid and you will be surprised to find how promptly it will mend its ways.

FORMULA FOR ACID SOLUTION

The solution used is 2 per cent by volume—not by weight. In small quantities this means:

Sulfuric acid, $2\frac{1}{2}$ fluid ounces.

Water, 1 gallon.

In the quantities used in large spraying outfits, the formula would be:

Acid, 1 gallon. Water, 49 gallons.

The acid to be used is the strongest commercial grade, which should have a specific gravity not less than 1.82, and approaches a strength of 95 per cent. Some of the acid on the market for special uses contains a smaller per cent of acid. If employed, a proportionately larger quantity should be used.

While sulphuric acid is not as corrosive to the skin as are some other acids, it is well to wash off without too much delay any acid that is gotten on face or hands. Clothing is considerably damaged sometimes by strong acid, and for safety only old clothes should be worn by the people who handle it. In making up solutions of the acid, the water should be put in the container before the acid, and the acid then stirred into it; the reverse process may result in overheating, spattering of the acid, or corrosion of the container.

NOTE: Dr. Long, the author of this article, is of the Office of Investigations in Forest Pathology, United States Bureau of Plant Industry, Albuquerque, New Mexico.



AMERICA'S GREATEST CANOE COUNTRY, THE SUPERIOR NATIONAL FOREST.
AND IT OFFERS AS WELL THE GREATEST SANCTUARY FOR OUR WILD LIFE

SANCTUARY!

BY ARTHUR HAWTHORNE CARHART

(Photographs by courtesy of the United States Forest Service)

A DAY during the moon of budding trees within the Superior National Forest of Minnesota is better than a trip through a thousand zoos. The actors in the comedy and tragedy of life in the lakeland woods pass fleetingly before your eyes. While your main object in going to this unexcelled lake country may be a canoe trip, you cannot but be interested in little incidents in the lives of our wild brothers of this wilderness which you will witness.

The Superior National Forest is, without question, one of the greatest game preserves we own. It is as full of

wild-life interest as the far-famed Yellowstone. It is a natural game country. One of its highest values lies in the wild life now there. Happily, it is now in a state game refuge, an ideal place to which the wild things may turn when driven from their old habitats by man, the hunter.

Should we, in wanton manner, slaughter our wild brothers, drive them from pillar to post, so harry their lives as to make living a nightmare, and finally blot out the species? No, a million times, no! These denizens of the wild, not being equipped to fight back, meeting high power with high power, must be given sanctuary.



MOOSE! A YOUNG BULL, WITH HORNS IN VELVET, SURPRISED WHILE ROOTING FOR LILY ROOTS IN A SHALLOW BAY

Man in his superiority must demonstrate that superiority by practicing the theory of live and let live. Nowhere can a better sanctuary be found than in the Superior Forest region.

Perhaps just a few flashes of wild-life drama will illustrate what one may expect there and show what a really wonderful game country it is. Matt Soderback and I were audience and sometimes actors in incidents such as these during trips through the forest early in a spring not long since past.

Matt worked diligently when we hit our first camp, and soon there was a spring bed of balsam, over which we spread our blankets. Supper over, we sat by the tiny fire and listened to the sounds of the great stillness. High in the skies the gods of the icebergs flashed their streaming banners. Great swinging fingers of light fanned the sky or dimmed to the faintest glow, as they subsided. Northern lights are really awe-inspiring when viewed from a wilderness camp.

Across the lagoon the tree frogs croaked. A small predatory animal caught and killed a rabbit near by. In the lagoon a beaver splashed. The rustling roar of Upper Deadman Rapids made the air vibrate ever so little.

Contact with Matt's balsam bed brought almost instant sleep, but I awakened in the middle of the night.



OUR CAMP AT LAKE 2, NOT FAR FROM THE SCENE OF OUR INTERESTING ENCOUNTER WITH THE MOOSE AND HER YOUNGSTER



THE SUDDEN APPARITION THAT SCARED A BEAR ALMOST TO DEATH, WHEN MATT STRODE THROUGH THE UNDERBRUSH, GIVING THE CANOE A RIDE

Bump—bump—bump—bump—bump—bump—bump!

For many moments I was lost in the haziness of half sleep. There was squeaking, thumping, and scurrying. Then it dawned in my mind that a whole army of rabbits was holding a regimental review in the moonlight, just outside our tent. Some people who have heard these thumpings on such a night declare that they have heard a moose charging around; and the thump of a full-grown rabbit does sound like it might be caused by an animal not smaller than a mature black bear. This thumping had actually awakened me from deep sleep.

Then suddenly a throbbing, drumming sound whirled in my ears. Starting slowly, it increased to a steady throb, like the beat of the pulse as it sounds in the ears when one has been running. Only this pulse was doing about 300 to 500 per minute at the climax of each erratic series of beats.

Palpitation of the heart, I told myself. Nothing to save me. With a pulse like that, no one could expect to pull through. I came awake with a start. I must write my will, get Matt up to hear my last words or do something!

The sleep haze cleared from my befuddled mind and I realized that somewhere in the thickets back from the Kawishiwi River a cock partridge was serenading his mate. It was the love drum of the mating moon.

Two days later we were crossing Lake 2, bucking a light head wind, and wondering where we would stop for the night. Matt spoke in a low tone:

"There is a moose on that headland," he said. "Get that camera ready. We'll see if we can sneak up on her. Sometimes when you head right for them they don't see you until you get there. Maybe she has a calf with her."

Buck fever can come with camera-hunting as readily as though you carry a high power. If you wish to prove

was evident that the cow would plunge into the narrow strip of water between this headland and the next. Over down timber, through brush, following the crashing path of the cow and squeaking calf, I tumbled until the cow had taken to water, with the calf following, and I had landed hip deep in the water at the point of land.

The calf struck out valiantly. The cow broke the way for her youngster, turning her head nervously to see how the young fellow was making it. Matt came by and we paddled across the water, still on the trail for pictures.

Arrived at the opposite shore, we landed. The calf was still in the water. When we approached, the little fellow ducked his head under water, straightening out his neck as he might if he were trying to hide himself by crawling under low brush or grasses. Matt jumped into the water and kept him from strangling, helping the struggling calf to the little beach that bordered the shore at that point. Up above, on the ridge, the cow milled and grunted.

"Go up and see if you can get a picture of the old lady," said Matt. "I'll hold the calf."

"Don't you suppose she will charge us?" I asked. Matt



CONTEMPLATING A GOOD JOB. IF YOU WANT TO SLEEP AS YOU NEVER HAVE BEFORE, LIE ON A BED OF BALSAM IN THE GREAT STILLNESS OF NIGHT ON THE SUPERIOR

this, try stalking a moose in the hope of getting a picture with an ordinary camera.

I ceased paddling and Matt manipulated the canoe. For a time the moose cow did not see us. She was standing up, keeping watch. Then, when she sighted us, she got down ever so stealthily.

"Trying to get out of sight. Thinks we don't see her," said Matt.

As we drew nearer, she turned her head from side to side. Then, as the canoe came within a hundred feet of the bank, she got up with a rush. Beside her rose a wabby calf, which could not have been more than two days old.

Two pictures were snapped at a point not forty feet away from the pair; then Matt grounded the canoe. Away went the moose family.

"Grab your camera!" shouted Matt. I already had it in my hand. "Chase 'em!" he yelled.

Now I had heard many tales of wild mothers defending their young when cornered, and it looked like a fine chance for this moose cow to demonstrate that that idea was well founded; but Matt was skipper of the trip, so I obediently crashed on shore.

Out jumped Matt. Down the neck of land we ran. Water was ahead. Matt dashed back to the canoe. It



THE BEST WE COULD DO IN OUR EFFORT TO SNAP THE COW MOOSE AND HER CALF. THIS WAS TAKEN AT ABOUT SIXTY FEET, WITH ORDINARY CAMERA EQUIPMENT

laughed. "Go on up," he said. "You'll be lucky if you get within picture distance of her."

For twenty minutes I tried to get within shooting distance of the cow. Then with a grunt she left the country, abruptly abandoning the calf to us. For another ten minutes we posed the young member of the moose family, taking pictures, which afterward proved that a rapid lens was needed to get this young fellow in action; for it was necessary to take his picture in action or not

at all. We did not succeed. A motion-picture camera might have been successful.

"I'd hate to tackle that fellow a month from now," remarked Matt, when he released his head lock on the calf.

Head winds, which made us ship water when we headed across Lake 3, argued us into camping for the night at a point near where we had abandoned the calf. With supper over, we elected to go joy-riding by the push-and-pull method. The fellow in the bow of the canoe pulls the lake toward him and shoves it along back to the fellow in the stern. The latter then shoves that portion of the lake to the rear.

A beaver splashed in the bay opposite the camp, as we set sail.

"Will we find the calf there?" I asked Matt.

"I think so," he said. "The cow will run in the direction she started for about three miles; then she will stop and wait for several hours, and

finally work back to this point. Eventually she'll get back to the calf."

The calf was still there when we got back to the little sand beach. But he did not like us and plainly showed it.

On the way back to camp from this informal call on the moose infant we had another interesting experience. We had stopped our canoe by the side of a narrow rocky island, at a point where a beaver had built his home into the side of the rocky cliff. It was an effective bit of engineering and we were admiring it, when the stillness of the wilderness was ruptured by a great splashing near a promontory less than a quarter of a mile away. Then we saw the head of a beaver breaking the reflecting surface of the lake. He steered our way.

"Keep still," suggested Matt. "He may be making for this bank-house. We'll see how near he will come to us."

That broad-tailed engineer was just curious. He was fearless. He did not bite a hole in the canoe, as a bear did one night when we left our bark unguarded, but he came almost close enough to puncture its canvas hide if he had elected to do so. He swam in circles not ten feet away, viewing us from every angle. We made no moves. Finally, he had seen enough or became suspicious.

Splash, *ker plunk!*

The big, broad tail threw water into the canoe, for he was not eight feet away from me, where I sat, in the bow. I never again hope to have a live beaver get so friendly as to come up and splash water in my face, but I shall always cherish this experience with this prankish dam-builder.

Several days later we came back that way. The moose cow had returned and annexed her calf.

So these incidents might continue through many pages. All of the experiences we had on our trips in this lake country are as full of interest.



EVIDENCE OF LUSTFUL KILLING. SEVEN COMPLETE BEAVER SKULLS IN ONE CAMP ON SEAGULL LAKE, IN THE SUPERIOR—IN A GAME REFUGE!

There was the duck who took her ducklings over an eight-foot water fall; there were the loons who whistled crazy jigs at sundown; the leggy gray herons winging high above the lakes; the wedge-headed varmint which we suspected of being an otter; the deer which

fought in the yard of the Isabella Ranger Station to see which would get the salt we had put out for them; the bear that thought a mountain was after him when he saw Matt making a portage with a canoe on his shoulders; the other bear who bit a hole in the canoe because he did not like the color of the paint or for some other equally good reason; the queer water bird we saw which quite successfully imitated a snag in the swamp, and the ghastly evidence of the slaughter of whole beaver colonies where predatory man had passed that way. These and many other experiences came to us in the few short weeks we traveled through this great game country.

If you would like to listen to the chatter of the loon, play water tag with a beaver, referee a scrap over salt between deer, or get clubby with a moose calf, plan a trip through the Superior Forest during the mating moon. If the rabbits do not overrun your sleeping quarters or false palpitation resulting from the love ecstasy of the partridge cause you to fly the country, you will certainly have experiences such as we had, as we glided through the maze of waterways that lace this northland forest. There, in the sanctuary of our wild brothers, you will find refuge from the hurly-burly rush of the busy world.





EDITORIAL

An Unwarranted Attack

AS this issue of *AMERICAN FORESTS AND FOREST LIFE* goes to press there comes to our attention an article entitled "Has Our Forest Service Gone Daffy?" published in the *Outlook* under date of February 11. The article is signed by William C. Gregg, an officer in several conservation associations, a member of the committee recently appointed by the Secretary of the Interior to select a National Park site in the southern Appalachians, and, according to the records of the Post Office Department, one of the owners of the *Outlook*.

Mr. Gregg, we are told by the *Outlook*, is "a great defender of the National Parks." His article is an insidious attack upon the work of the United States Forest Service, launched in language which questions, by implication at least, the integrity of its men from ranger to Chief Forester. In choosing his method of attack, the author has resorted to the last annual report of the Forester, apparently secluding himself with that document and working himself into an uncomfortable and irresponsible passion over the discovery that ten million Americans annually are using their own National Forests for recreation.

It would appear that Mr. Gregg sees in everything that the Forest Service is doing, as reported by the Chief Forester in his annual report, a secret meaning, which he interprets as a fallacious effort on the part of the foresters to make recreational parks out of our National Forests. Fire protection, timber sales, tree planting, control of insects—all these activities, the author would have us believe are being neglected in order to make the National Forests safe for recreation.

As for the nine million odd dollars which Congress allotted the Forest Service for the purpose of carrying out the provisions of section 23 of the Federal Highway Act, and which was spent in building roads through the National Forests in coöperation with the States, Mr. Gregg, with all the dramatic hush of the written word, warns us "Tut, Tut, Friend Citizen, the roads are for recreation; the Forests are for recreation." With a plentitude of assumptions, inferences, and innuendoes the

author would convince us that this must be true, because the Chief Forester in one part of his report states that recreation has become a major use of the National Forests.

Mr. Gregg's article is lacking in substance, conviction, and fair handling. To those familiar even in a small measure with the work of the Forest Service, the article, we think, will be readily identified as dealing not in straightforward facts, but in malicious contortions by inference and implication, of the report of the Chief Forester. By this class of informed readers it will not be taken seriously. But, viewed from the standpoint of those unfamiliar with the forest work of our Government, the article assumes a more serious aspect by its tendency, unjustifiably, to shake public confidence in the Forest Service and in our National Government in general. It requires no unusual cleverness for an individual to take almost any annual report issued by a bureau of a department and deliberately to draw conclusions impugning the motives and questioning the integrity of those in responsibility. If the press of the nation is to lend its offices to this class of reading matter, it is indeed the dawn of a serious era for our system of government.

That the *Outlook*, which in the past has always been deserving of public confidence and has always stood for the Roosevelt principles of conservation, should open its pages to an article so eminently unfair and misleading is difficult to understand. That the editors, with editorial prominence, should hold up Mr. Gregg to the public as one of the few especially qualified to speak upon the work of the Forest Service, and should declare his unsupported inferences "a call to the American people," is equally hard to understand. Throughout the article, Mr. Gregg displays, in our judgment, either an illuminating ignorance of the work of the Forest Service and the legal allotment of its funds, or he has deliberately withheld that knowledge. Both he and the editors of the *Outlook* must know that the work of our Federal Bureaus is at all times open to public inspection. The first principle of fairness, we think, demanded a prior investigation before

publication of such absurd inferences as the article contains.

As a destructive contribution to the effort now being made to work out our national conservation principles in a calm, friendly, and mutually helpful spirit, the article is especially unfortunate. Coming at a time when progress is being made to bring together the different conservation elements, and to co-ordinate them in a broad balanced program of conservation based upon an orderly determination of the highest uses of our natural resources, articles of the Gregg stamp merely inject discord and bitterness and thereby undermine the mutual confidence of

those endeavoring to develop our federal land policies for the best good of the nation. The common judgment of well-balanced minds will, we think, support the assertion that the problem is one which demands dispassionate thinking and constructive co-operation, and not a campaign of malicious implications.

The Forest Service, we have no doubt, will effectively dispose of Mr. Gregg's extravaganza. As for the *Outlook*, we believe it owes it to its readers, to the cause of conservation, and to the men who are consecrating their lives to that public work, to make a thorough and complete investigation of Mr. Gregg's insinuations, and to publish its findings in full.

The Flame in the Night

THERE is an old Chinese proverb which reads: "One picture is worth ten thousand words." In the case of forest fires, we think that one picture which would portray all their ramifying tentacles of destructiveness would be worth ten times ten thousand words. But man has not yet succeeded in putting such a composite picture on film or canvas, so we must continue to use the humble word.

A rare word picture of forest fires as a national menace was painted by Mr. E. T. Allen at the annual meeting of The American Forestry Association in Chicago last month. It is reproduced on another page in this issue. We wish that it might be read by every man, woman, and child in the United States. It is a picture which they ought to have always with them. With graphic and forceful lines, it is charged with a fire consciousness which should characterize the nation.

Mr. Allen's word picture is one which can hardly fail to bring us all up with a start that so little headway is being made against this national menace. It is a human failing that those engaged in specialized campaigns are wont to magnify the scope of their efforts. If com-

placency exists in any minds that all is being done that can be done to instil a forest-fire consciousness into the minds of the American people, they need but read Mr. Allen's statement. We cannot escape facts. The campaign of forest-fire education has as yet hardly scratched the surface. It is a fundamental work which must be accomplished; for, as Mr. Allen has so aptly pointed out, "There remains to be appraised and faced its (forest fire) sinister threat against every forestry step this Association advocates, every purpose of forest reform, every forestry investment, whether private or public; every attempt to assure this country a wood supply, and to keep its forest land surface a sustaining national asset."

The week of April 27 to May 3 will, by presidential proclamation, be observed as forest protection week, under the new name "American Forest Week." The American people are urged during this week to give common thought to their forests and to inform themselves as to their forest needs. Into that week the picture of forest fire, entrenched against every broad advance of forest restoration, must loom as clearly as a giant flame in the night.

Uncle Sam, Land Buyer

IF ONE or more of the bills now pending in Congress looking to the establishment of National Parks in the southern Appalachians is enacted into law, the Federal Government will be engaged in the dual activity of purchasing land for National Forests on the one hand and for National Parks on the other hand. These two similar activities will be conducted by separate departments, working more or less independently. Purchases of land for National Forests will continue to be conducted, as in the past, through the Department of Agriculture, while those for National Parks will be conducted through the Department of the Interior. Anyone familiar with the facts knows that under this division of authority and responsibility competition for lands for the two purposes is very apt to develop.

Governmental economy, no less than the best interests of the forest and park movements, would seem to demand close co-ordination of these two activities. The acquisition of land for park purposes involves many of the same steps as are necessary in the purchase of forest land and can be most economically accomplished by a common governmental agency. Such an agency already exists in the National Forest Reservation Commission, a non-partisan body composed of the Secretaries of War, Interior, and Agriculture, two Senators, and two Representatives of Congress. During more than twelve years of work in acquiring lands for National Forests in the East, the Commission has built up an expert, efficient organization, which is more familiar with land values in the southern Appalachians than any other organization in existence.

After lands have been definitely selected for a National Park, the Commission is eminently qualified for the laborious and expensive work of acquiring them in the name of the United States.

But co-ordination of the Government's work in buying park and forest lands should begin even earlier. It should start with the development of definite park and forest policies looking far into the future and based on the best economic use of lands for the nation as a whole. There should be harmony and agreement in the working out of these policies, in order that both activities may proceed as the national need merits.

It is, perhaps, uncommon to think of National Parks as representing the economic use of land. They nevertheless withdraw land from so-called economic use and are, therefore, factors in any broad policy of land management. The place of the National Park should be definitely fixed in the economic scheme of federal land purchases. It would appear that a federal commission, composed of competent men and created to co-ordinate land

policies of the Federal Government, could serve a very high purpose. As things now stand, there is no definite park policy for the eastern United States, and the average citizen who is called upon to support this or that park program must necessarily guess as to its ultimate objective, as to whether or not it will interfere with the Government's present program of forest land acquisition, and the extent to which it is based upon a thorough, sound study of land values and national needs.

The American Forestry Association has advanced a policy and program of forest-land acquisition for the next ten years. It is definite and clear-cut and eminently justified by every standard of national welfare. Let the park advocates advance a specific park program, and then let a representative commission of the Government mold the two activities into their proper proportions and co-ordinate them for efficient and economical execution. That, we believe, is the way the people of the United States would like to see Uncle Sam conduct their business of buying land for forests and parks.

Shenandoah National Park *et al.*

WITHIN the past month the proposal to have the Federal Government purchase a large tract of land in the southern Appalachians and set it apart as the Shenandoah National Park has assumed an aspect which demands thoughtful consideration. On January 27 a bill was introduced in the House by Representative Temple to authorize and to direct the Secretary of the Interior to determine the boundaries of the proposed Shenandoah National Park and such portions of the Smoky Mountains lying in Tennessee and North Carolina as he may recommend as a national park, to be known as a Smoky Mountains National Park, "and such other lands in the southern Appalachian Mountains as in his judgment should be acquired and administered as national parks." On January 29, the bill was amended to include the Mammoth Cave regions of Kentucky. The bill would authorize the Secretary of the Interior to appoint a commission of five members, composed of a representative of the Interior Department and four national park experts, to carry out the provisions of the act. An appropriation of \$20,000 would be provided to pay the expense of the work and permit the Secretary to secure options on the lands to be recommended for national park purposes.

It is evident that the sponsors of this legislation contemplate not one, but an indefinite number of national parks in the southern Appalachians. Such a proposal very properly will have opposition on the ground of its very indefinite objectives, if for no other reason. It forces at once the query, What should be our national park policy

in the East? Should it zealously maintain the present high standards of our national parks as museums of unusual scenic features, or should the doors be thrown open, as the measure in question seems to contemplate, to a series of national parks, each duplicating scenic qualities more or less characteristic of a common region? The latter proposal may in this instance find favor in the states involved, but in the rest of the country we believe it will be looked upon as a movement inimical not only to the national parks, but the highest use of natural resources.

Among individuals and organizations generally, there is unquestionably much potential support for a national park in the Appalachian Mountains, provided it typifies the best scenic features of this mountain range and thus is entitled to national interest and importance. The American Forestry Association has endorsed the area selected for the Shenandoah National Park because it is a highly representative section of the Blue Ridge, and because it will not interfere with the operative program of the Federal Government in forest land acquisition in the southern Appalachians. The Association does, however, oppose the purchase of numerous areas for the establishment of national parks when these areas will by the very nature of the country merely duplicate one another. Such a policy of park acquisition would undermine the distinctive standards of national character now possessed by our national parks and threaten the rational development of natural resources needed in the upbuilding of the region.

RESOLUTION PASSED BY THE AMERICAN FORESTRY ASSOCIATION AT ITS FIFTIETH ANNIVERSARY ANNUAL MEETING HELD IN CHICAGO, JANUARY 22, 1925

WHEREAS recreation on public forests has become one of the major uses of these lands, in some instances becoming the dominant use; therefore be it

Resolved, That The American Forestry Association recognizes this development and urges that adequate provision be made for this use of public forests.

We Want to Know

BY NEVADA EVANS SCHMIDT

The "We" in this story are the people of our burnt-over forest lands. Toil, poverty, isolation, these are their common lot. Schools they have, but colossal is their ignorance of the young forests trying to grow all about them—forests which might alleviate their hardships. The author's plea for forest education for these people should be speedily answered by our educators.—EDITOR.

EACH year, with monstrous religiosity, the public is supplied with propaganda denouncing the wasteful scourge of forest fires and with propaganda encouraging reforestation. City people especially are reminded and aroused by newspaper editorials, by educational movies, and by billboard advertising during forest-fire prevention week. Yet the terrific waste of timber goes on.

Seldom, if at all, does the cry for the preservation of the little second growth that follows after a forest fire greet our ears. Almost as vast as the fire-swept lands themselves are the stretches of brush or second growth that extend throughout these regions. Each year, with inevitable regularity, certain of these areas are burned off with the intent to kill the brush, with three or four years of growth to its credit.

Of what does this little second growth consist? Often those soft-timbered trees that are at the present moment in such demand by the wood-pulp industries for paper manufacture. The poplars, such as the aspen and the

cottonwood, spring up quickly in the valleys and work slowly back up the slopes into the more dry interior. The quaking asp is one of the most valuable cover trees for forest land devastated by fire. It acts as nurse to the hardwoods and conifers that later take ascendancy. Birch, alder, and willow, water-loving trees, do their bit by filling in along the watercourses. All these trees and shrubs, if permitted to live, quickly cover the surface of the burned district and prevent erosion of the soil.

This latter point cannot be overemphasized, as many of our northern states are noted for their beautiful lakes, which often lie deep amid hills where fires have raged. These hills erode and are quickly washed down into the lake basin unless the second growth is encouraged and allowed to remain. Already many of these little gem-like lakes have become sloughs because the fairy forest surrounding its basin has been burned in heedless fashion.

The slow-growing trees that make up the primeval forest—the oaks, the maples, the ashes, the pines, and the spruces—lie hidden beneath the premier cover crop. The



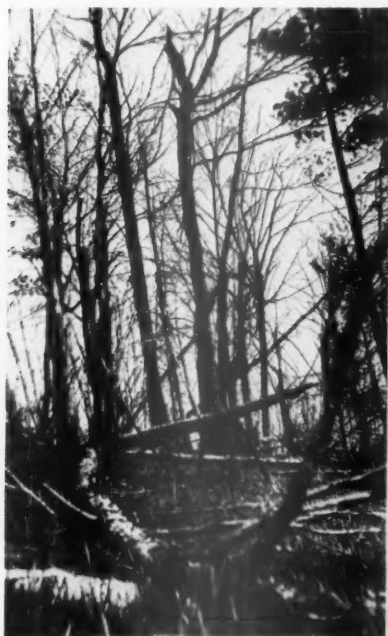
A SMALL CLEARING OF OAK AND MAPLE IN WHICH CLUMPS OF JUNE BERRY ARE LEFT TO SERVE HOUSEHOLD USE



SECOND GROWTH ON A LAKE SHORE CLEARED UP. WITH HEAVY TIMBER LOGGED OFF, BRUSH FIRES HAVE EXPOSED THE BANKS



NURSING THROUGH. THESE YOUNG PINES ARE GROWING AMONG BIRCH AND ALDER, THE LATTER ACTING AS A SHELTER



FORTY ACRES OF HEAVY SECOND GROWTH BURNED, DUE TO NEGLECT OF A BRUSH BONFIRE DURING THE LATE FALL OF 1923



A 320-ACRE TRACT BARED OF SECOND GROWTH, A HIGH WIND HAVING CARRIED A BRUSH FIRE BEYOND CONTROL



SCORCHED BY A RAGING FIRE. NOT LONG SINCE THIS WAS PROMISING YOUNG PINE—TEN YEARS TO GROW TEN SECONDS TO RUIN

quick growers take fifty years, the slow and deliberate ones take from eighty to two hundred and fifty years, to reach maturity. Yet we of the brush country fire an area of brush that is from three to ten years old with a mere shoulder shrug. It is our easy method for clearing such land when the wind is right for us. Thus the fire sweeps beyond and takes miles and miles of brush, as the wind plays to and fro. We fail to co-ordinate the tree in the brush stage with the tree which has attained the saw-timber size. We think only in terms of saw timber, and this second growth appears to us as a pretension, a falsehood. We value it not. If we had bought some thousands of seedlings at a nursery and set them out on virgin prairie, we would preserve and appreciate them; but given the same seedlings, growing naturally out on the burnt-over lands, they immediately become "brush."

We of the burnt-over country and brush lands are poor. We often suffer for clothes and food in winter. We live in scattered districts, far away from the centers of civilization, and they know not of our struggles and our hardships. We work with readiness, with industry, and with thrift, but we do not know how to meet the problems that confront us.

We have our rural school, yet we do not know that the arbutus that lies blooming between the rifts of snow in the early spring is salable, if carefully picked and shipped to a florist.

We do not know that ground cedars and club mosses, if woven into wreaths with small cones and wintergreen

berries, will bring a high price at the holiday season.

We do not know the pulp woods and their values.

We do not know the food value of chokecherries, hazelnuts, junberries, and blueberries.

We do not know the ginseng or the goldenseal, whose roots are needed by druggists and tanners.

We do not know that brush fires destroy all these things of value and also drive out game—the very game we need to keep us from starvation in winter.

We do not know that grouse, rabbits, squirrels and other small animals flee in front of these brush fires, seeking shelter many miles away.

The city peoples need to be educated along lines of fire prevention in the timber districts. We rural folk need it even more than they. Our country schoolhouse should be the center of educational films that demonstrate the worth of the trees, the shrubs, the vegetation, the animal life, that is so characteristic of the second growth. It is here that a forest is being born, and it is here that remedial action must also begin. The more isolated and the more poverty-stricken our district, the more we need to be educated to appreciate nature. We are far away, and in our intense poverty we grasp at things beyond. We clear land for crops that are destined to fail, when, if we knew what fortune lay at our very feet, we would willingly make use of what Nature has supplied us, instead of destroying this second growth, this brush, this fount where we can alleviate our misery.

The Wind in the Forest

(Continued from page 136)

what a pine seed and its wing look like, if you have forgotten. In the same drawing appear other typical seeds which bear wing or plume against the day when the wind stirs in the forest.

But the same kindly winds that bear the offspring of giant trees carry also the innumerable host of what are called the spores of wood-destroying fungi. Although to the botanist not quite the same as seed, these spores are like seeds, in that they give rise to their kind—the rots that prey on dead and living wood. When a tree is injured, as by the breaking off of a branch or the killing of some of the bark by fire, the wood is left exposed, and is almost certain to receive on its bared surface a great number of wind-borne spores. Unless these spores are destroyed by the sun, or by the flow of resin or other antiseptic product of the injured tree, one or more of them gets a foothold and produces rot in the tree. Rots are the cause of enormous losses in the forests of America today. I once scaled logs on a government timber sale in the pine-clad mountains of New Mexico where, in an area of a square mile, from a third to a half of the contents of the logs was hopelessly decayed.

At the same time, were it not for the rots which reduce to tangled fibers or to powder the substance of fallen leaves, twigs, and branches, and even the mighty trunks of trees which have died and been toppled earthward by earlier winds, the forest soil would in time be exhausted and become as infertile as when repeated farm crops are harvested from a field without any fertilizer being used to replace the substance they drew from the soil. Whether the rots work havoc or advantage to the forests, which are man's friends, their spores are chiefly wind-dispersed.

Do you remember, in "Molly Make-Believe," how Molly entertained her rheumatic lover with a newspaper clipping about the maker of violins who always went into the woods to choose the trees from which his violins should come? And how Carl swore that never again would he "wake in the night to listen to the wind without thinking of the great storm-tossed, moaning, groaning, slow-toughening forest trees learning to be violins!" Whether or not the spruce trees of the North take their prospective conversion into violins as seriously as all this, the late discovery of the foresters gives us reason to believe that the wind may be the real architect of tree trunks.

In another article we shall see how the form which the roots of trees take is influenced by the wind. And, so

far as the crowns of trees are concerned, no one who has ever been at timber-line on mountain tops will doubt what invisible hand it is that molds the crowns of trees. On the side from which the prevailing wind blows, not one branch is left, and, bowing their heads before the storm, the trees of the timber-line "huddle in patient agonies."

But the idea that the wind determines the shape taken by the trunks of trees is a new one. A European forester was the first to assert that the form taken by every tree trunk, in every forest of the world, is determined by the wind. A tree makes new wood year after year, and builds up one portion of its trunk while neglecting another, not in any haphazard way, he declared, but in such fashion that it can best resist the wind.

It is a principle familiar to all architects and construction engineers, that the stresses and strains in any building should be equally distributed throughout the structure, if the greatest strength is to be attained from the least material. So it is with the trunks of trees. The majestic shaft raised through the centuries by pine and oak, poplar and redwood, are at least as architecturally perfect as the proudest skyscraper of man's fashioning. Both must stand the buffeting of the wind. The skyscraper meets it with ribs of steel and from a foundation generally of rock. But the tree must meet it with fibers which, though strong, have perhaps a tenth the strength of steel, and, as we shall later see, from a foundation often of the most yielding earth.

The proof which is put forth in favor of the theory that the wind molds the tree trunks is chiefly the difference in the proportions of the trunks of trees growing alone in the open and those growing crowded together in the forest. The bole of the open-grown tree is very broad at the base and tapers rapidly to the tip. This is just the form which any structure of like materials and foundation must take, if it is to resist winds which, unhindered, sweep upon it from every side. But in the forest, where the trees stand in stately fellowship and each protects the other from the storm, their trunks rise slenderly and with little taper until the top is nearly reached. No doubt the trunks of all trees of a given kind and age would be proportioned alike, were there no wind in the forest. (EDITOR'S NOTE: This is the first of a series of articles by Mr. Forbes dealing with the growth of the forest. All photographs, except where otherwise noted, by courtesy of the United States Forest Service.)

NEW DIRECTORS

Former Governor Frank O. Lowden, of Illinois; Dr. John C. Merriam, President of the Carnegie Institution of Washington, and Dr. Frederick H. Newell, former Director of the Reclamation Service, are new members of the Board of Directors of the American Forestry Association. They were elected at a meeting of the Board, held on February 10, to fill vacancies which have recently occurred in the Directorship as a result of the death of David L. Goodwillie, of Chicago, and the retirement from the Board of Mr. George D. Long, of Tacoma, Washington, and Mr. Justin R. Swift, of Franklin, Pennsylvania. Mr. Long asked to be relieved because his distance from Washington makes it impossible for him to attend and actively participate in the meetings of the Board.



AN ARM OF GREAT CORDONA SALT LAKE, LYING IN THE TEXAS POTASH AREA

Potash—A Newly Found Natural Resource

Recent Discoveries of Deposits in Texas May Dwarf the Wealth of Our Gold Mines

BY GUY ELLIOTT MITCHELL

IS POTASH to join our galaxy of natural resources and free us from paying exorbitant millions of dollars to Germany in order that American farmers may have this necessary fertilizer? Recent discovery by the Geological Survey of a great potash field in Texas, after years of search throughout the West, gives promise that the question will be answered in the affirmative.

The German world-monopoly deposits at Stassfurt were discovered as an accident, while drilling for salt, and the potash has proven to be worth a thousand times the value of the salt. Curiously, too, the Texas deposits were discovered while drilling for another substance, namely, oil; and even should this Texas oil field prove to be the richest oil field in the country, its value would be insignificant compared with the value of the potash, if these deposits are found to be anything like as great as the Stassfurt mines. Dr. George Otis Smith, Director of the Geological Survey, states that if the new American potash deposits prove to be comparable to the German deposits, the value of all the gold mines in the United States will be small as compared with the value of this potash to the American people.

"Oh, well," the average citizen may say, "merely a question in which the farmer is interested! Doubtless it will be a good thing for the farmer, but the rest of the

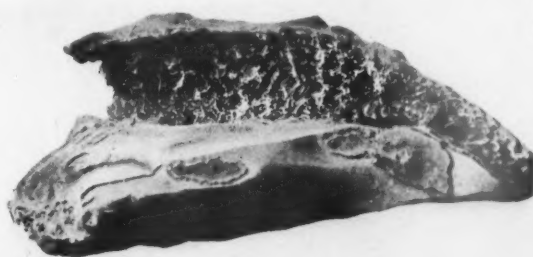
country is not specially concerned. It is certainly nothing for the man living in a city to get excited over."

Never a bigger mistake in the world than to assume that plentiful and cheap potash for the farmer is only an agricultural question. Primarily it is, yes; but it hits the whole nation in its very vitals and directly affects the pocketbook of every man, woman, and child in the United States. The discovery of potash should be nothing less than a matter for general rejoicing; for potash is a vital necessity to the growth of every plant, and to the production of every single mouthful of food that we eat. Potash

is, moreover, the *great key* to farm fertility, and our farm lands must have it in large quantities to keep them from getting poorer and poorer, and from producing smaller and smaller crops, and thus making the cost of eating higher and higher. At the present time we do not use nearly enough potash on our farm lands, because it costs so much to import it. We are just where we were before the war in paying tribute to

Germany, for German potash producers again have American farmers by the throat.

When the importations of German potash were cut off by the war, the United States was driven to extremes to produce enough potash for our minimum needs, and later for our war needs, since potash is used in manufacturing



A SAMPLE OF TEXAS POTASH, TECHNICALLY KNOWN AS POLYHALITE AND DIFFERING ONLY SLIGHTLY FROM KAINIT, ONE OF THE NATURAL POTASH SALTS SOLD BY GERMANY IN LARGE QUANTITIES DIRECT TO AMERICAN FARMERS



THE GERMAN POTASH DEPOSITS AT STASSFURT, WHICH HAVE MONOPOLIZED WORLD MARKETS, WERE DISCOVERED THROUGH AN ACCIDENT WHILE MINING FOR SALT. THIS SHOWS THE UNDERGROUND TRANSPORTATION METHODS EMPLOYED AT THE STASSFURT MINES

explosives. In spite of very strenuous efforts, but little was accomplished, and last year our domestic production was less than 40,000 tons, against purchases from abroad of 750,000 tons. These efforts at domestic production developed the strange fact that while the huge German deposits of potash salts have been the only known deposits in the whole world, potash is one of the most abundant mineral constituents. It has been found in whole mountain ranges of "potash-rich" rock; but Nature has locked up the potash so tightly in these rocks that no cheap process has yet been developed which will release it and make it available as plant food.

When the potash fight began with Germany over excessive costs, some twelve or more years ago, Congress gave the Geological Survey small annual appropriations to search for American potash, and geologists examined the entire western arid region in the belief that there were to be found, in the great basins of the West, extensive potash beds similar to those of Germany. Such beds have now been found.

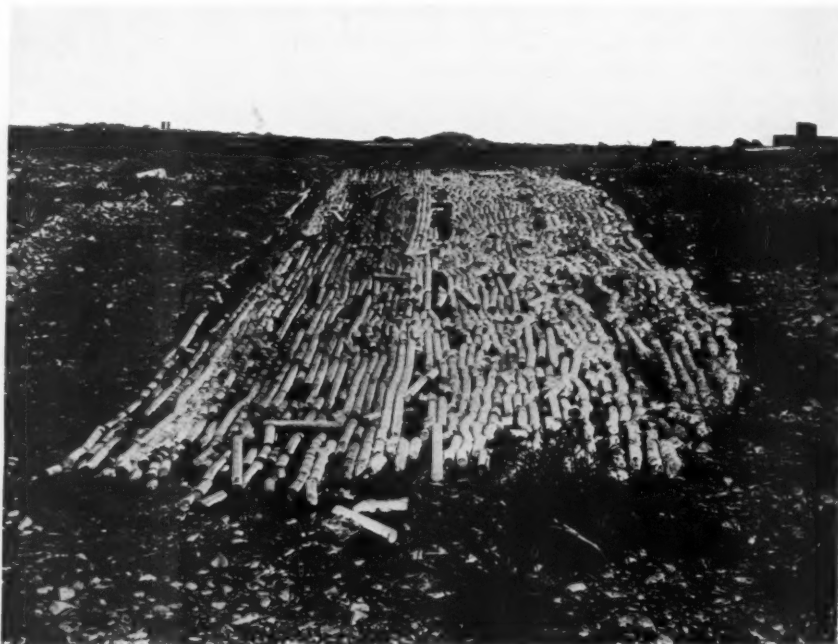
Like the German deposits, the Texas potash beds were once the floor of a great interior sea. The sea became cut off from the ocean and eventually dried up, leaving all the salts which was held in solution

deposited in extensive layers or beds of common salt, potash, and other minerals. Later the ocean waters again invaded the land, and the process was repeated, and finally deposits of other material were laid down on top of the potash, in the millions of years that followed; so that now the potash beds are found at depths of several thousand feet.

The Geological Survey started its exploration by drilling a number of test wells in various Western States; but the money allotted was so little and the area to be explored so great that the work seemed like looking for a needle in a haystack; so that during the past couple of years the Survey geologists and chemists have

simply sat by and watched the logs of many oil-drillers. The results in Texas were successful.

In this discovery of potash there has been little of the romance that has attended the great gold strikes in America, although the reward to the nation promises to be much greater. The discovery has been, in fact, most prosaic, and the situation is not yet entirely satisfactory, because the oil-drillers use churn drills, which muss up the drillings into a slush and do not give the geologist or the



LONG LINES OF CORE DRILLINGS FROM A TEXAS WELL. TO OBTAIN EXACT KNOWLEDGE OF THE ROCK STRATA, IT IS NECESSARY TO USE DIAMOND DRILLS, WHICH CUT OUT THE CORES OF THE ROCK ENTIRE AND PERMIT OF ACCURATE ANALYSIS

chemist the exact knowledge of the rock strata that a core drill does. Indeed, it is wells bored by diamond drills, which cut out the cores of the rock entire, that we must have; they are imperatively needed, and it is to provide them that Senator Sheppard, of Texas, recently held hearings on his potash bill and succeeded in getting through the Senate an appropriation of half a million dollars for this year to enable the Geological Survey to exactly locate the potash beds and determine their magnitude and richness. It is hoped that this bill will pass the Congress next year. But even the result of the drillings thus far made has caused no little excitement among economists and fertilizer men, and, wherever they understand the full significance of the discovery, among the farmers. The tract in which potash has been found here and there is enormous—about 125 miles by 275 miles long.

The most spectacular feature thus far of the Geological Survey potash discovery is at the Means well, in Loving County, Texas, where the drillings were collected and analyzed for potash to a depth of 5,208 feet. A number of comparatively rich beds were pierced by the drill, analyzing 4 per cent, 6 per cent, and 9 per cent, while in the five feet of material between the 990- and the 995-foot levels, which would be an easily workable depth, the samples analyzed 11.21 per cent (K_2O). The Texas potash, technically known as polyhalite, is not very different from kainit, one of the natural potash salts of the German mines, which is sold in large quantities direct to American farmers. Polyhalite is soluble in water, and needs no treatment except grinding before being applied to the soil.

This flat-lying Texas potash bed may extend for miles, but additional drilling will, of course, be necessary to find out its extent. Geologists are of the opinion, however, that the various beds will be found to be of large extent, while it will be strange indeed if thick, and probably even richer, beds are not discovered. Even a five-foot bed of polyhalite running 11.21 per cent would yield no small amount of fertilizer. It has been calculated that such a bed would contain 11,321,000 tons of potash salts to each

square mile. The cost of mining this potash is, of course, somewhat problematical; but, at the current market prices of potash on the farm, such a five-foot bed would have a potential value to each square mile of about \$160,000,000.

While American farmers got along pretty well through the war period with little or no potash in their fertilizer,

potash is, nevertheless, a prime soil necessity, and no soil can go very long without it. It is one of the three necessary plant foods, the others being nitrogen and phosphorus, as every farmer knows. The more widespread and effective fertilization of American soils is not merely an agricultural requirement, as the Geological Survey points out; it is a national necessity, upon which depends the commercial welfare and prosperity of the country in the near future. The wearing out of American farming soils constitutes a menace to the nation of no small proportions.

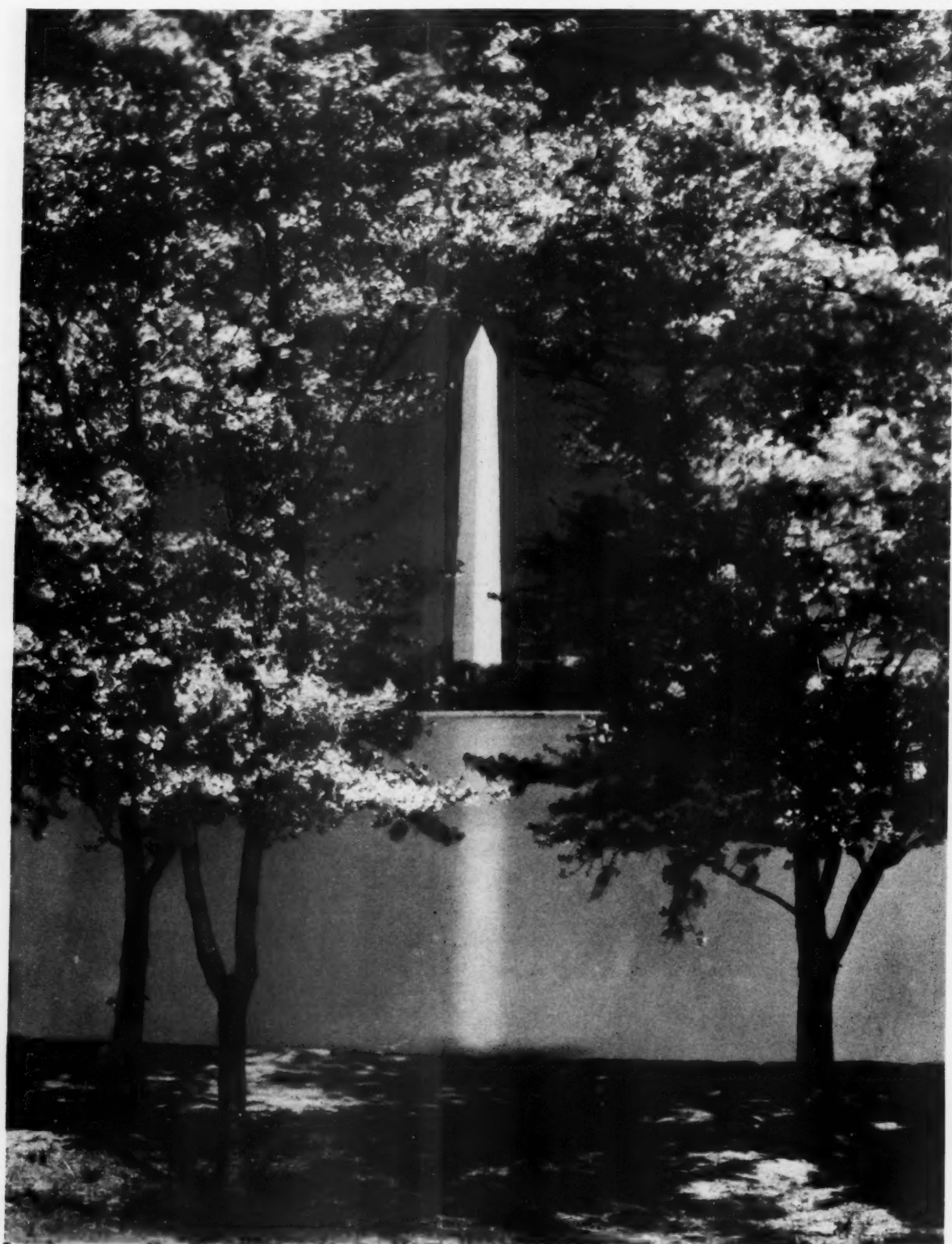
Scientists and others have stated that this question of farm fertility is the most important economic problem of the United States today, and that beside it our war debts are trifling and temporary. This is somewhat

startling, when we consider the size of our national debt, but it is readily capable of proof. Our war debts are huge, but our great farming area, kept permanently productive, will in the course of a few years produce enormous aggregate wealth. If America is to prosper, her soils must be kept fertile and productive. This requires just three fertilizing elements—nitrogen, phosphorus, and potash; and potash is, without question, the key, because, according to the Geological Survey, we have almost inexhaustible deposits of rich phosphate rock, while of nitrogen there is really an inexhaustible supply in the air, which can be captured by the use of water power and by the countless minute bacteria working on the roots of the clovers, cowpeas, and other legumes.

Now, have we found potash in great quantities? Our practical men of science say that we have, and that it is urgent that we should have early and reliable information as to the exact location, extent, and richness of the beds. This would appear to be a far bigger question for the consideration of farmers than that of whether the Gov-



THIS IS THE ONLY CORE-DRILLING OUTFIT SO FAR IN COMMISSION ON THE TEXAS POTASH AREA



Cherry Trees from the Land of Nippon Frame the Washington Monument. Colorful and Full of Grace, They Offer Strong Contrast to the Pure, Severe Lines of the Beautiful Shaft

Americanizing the Japanese Cherry

Established at the Nation's Capital, Along the Shores of Potomac Park, the Beauty of Their Blossoming in Early Spring Qualifies Them for Citizenship

BY PAUL RUSSELL

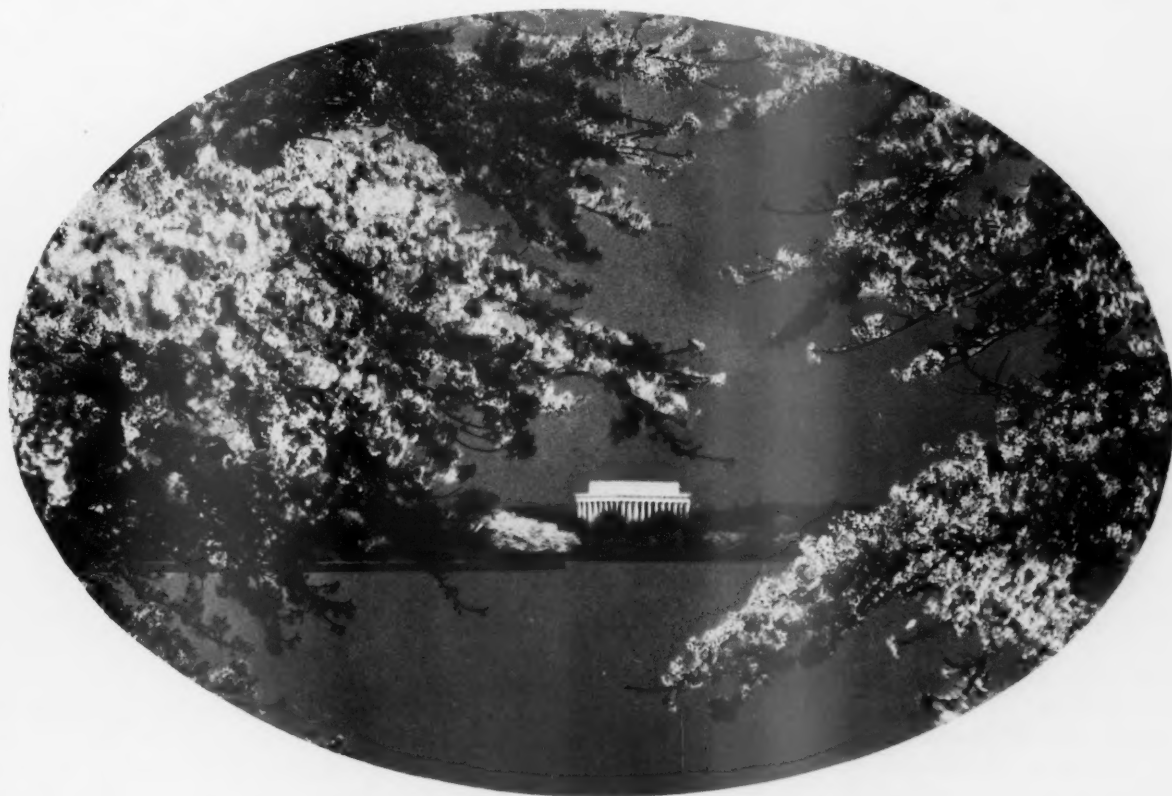
Photographs by Ernest L. Crandall

WHEN is the best time to visit the National Capital? Eight out of ten Washingtonians will probably reply:

"Come when the Japanese cherry trees are in bloom."

It may, perhaps, be putting it too strongly to say that

affairs and train schedules, to conform with "Cherry Blossom time." The fame of the blooming cherry trees in Potomac Park has become well-nigh nation-wide, attracting not only Americans from all ends of the country, but foreign visitors as well. These trees, when in flower,



A Vista of Rare Beauty. The Lincoln Memorial, in the Distance, is Seen Through the Cherries at the Height of the Flowering Season

the three miles of cherry trees which border the driveway and shoreline of Potomac Park influence the travel of the nation, but it is true that of the army of Americans who flock to Washington every spring to get acquainted with their National Capital, thousands have adjusted their

are one of Washington's "showiest places." And they have made themselves perfectly at home, which leads to the query, will America Americanize the Japanese cherry tree? Why not? The flowering cherry in its many varied forms is closely interwoven with the national customs and

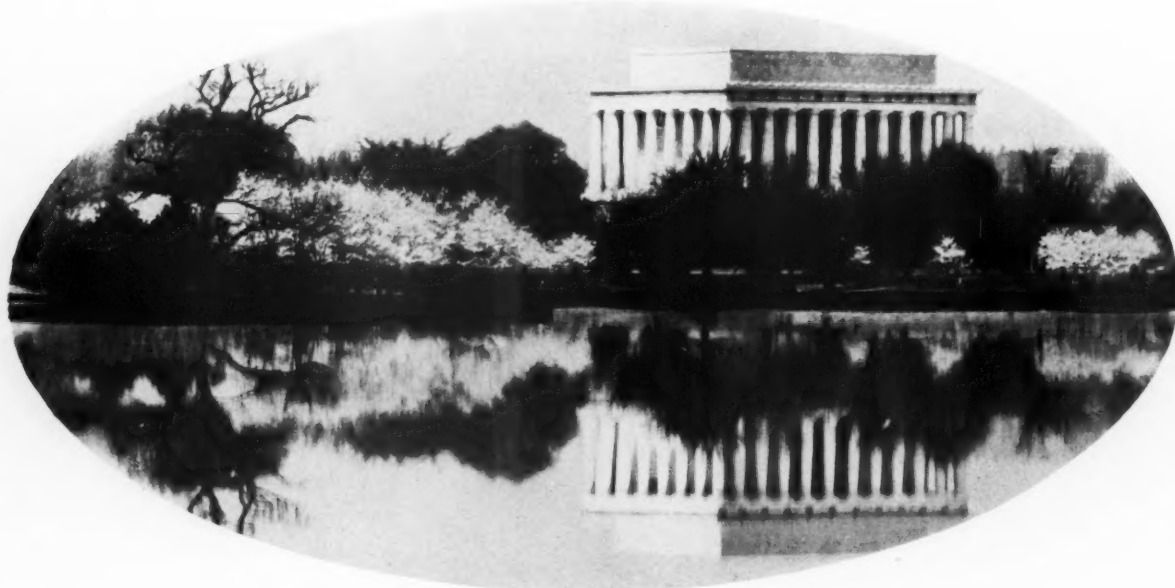
literature of the Japanese people. The development of the many beautiful and distinctive varieties is one of their proudest horticultural achievements. If these varieties are adapted to the soils and climates of considerable areas of the United States, why, indeed, should we not make the most of a tree so remarkably beautiful and outstanding in its decorative artistry?

Twenty years ago there were but very few of these trees known in America. These had been obtained direct from Japan or through European nurseries. In 1906 Dr. David Fairchild imported twenty-five varieties and planted them at his home, "In the Woods," near Chevy Chase, Maryland. The successful establishment of this collection has proved conclusively how admirably even the most delicate kinds could thrive in the United States.

Today there are several other flowering cherry collec-

trees, but also in small private grounds. Extreme heat, cold, and drought, however, are unfavorable to the flowering cherry, and they should not be expected to succeed under such conditions. However, they have proved hardy at the Arnold Arboretum, in eastern Massachusetts, where proximity to the ocean tempers the severity of the winters, and at Highland Park, in western New York, where also the winters are made milder because of the influence of the Great Lakes.

The character and beauty of the flowering cherries is distinctive. Unlike many of our more common woody ornamentals, the flowering period is of relatively brief duration. Early in the spring the bare boughs are suddenly clothed with myriads of white or pink, often fragrant, flowers, which, after we have enjoyed their glory for a week or so, disappear almost as suddenly as they came, leaving only pleasant memories behind. In the



Art and Nature Conspire to Make a Perfect Whole in This Close-up of the Memorial and its Blossomed-Bordered Shores

tions in good condition at various locations in the eastern United States. Besides the one in Potomac Park, Washington, there are a large number of varieties growing at the Arnold Arboretum, Jamaica Plain, Massachusetts. These were brought together mostly by Mr. E. H. Wilson, Assistant Director of the arboretum and author of "The Cherries of Japan." At Highland Park, Rochester, New York, a good-sized collection, including many varieties, has also been established. A number of the better forms are now offered in the trade by three or four of the eastern nurseries, and as a result scattered trees may be found here and there throughout the greater part of the eastern United States and also on the Pacific coast. There is no reason, however, why these charming oriental trees should not be much more widely grown, not only as park

autumn, however, many of the varieties make themselves again conspicuous by the unusually brilliant coloring of their foliage.

The importance of a proper setting for these cherries should not be overlooked. If not used for lining avenues or parkways, they will show up to very good advantage when planted among evergreens, thus affording the greatest possible contrast for the delicate pink or white flowers in early spring, when many of the broad-leaved trees are bare. As may be gathered from some of the photographs here printed, it is doubtful if a more beautiful setting can be found in this country than that in Potomac Park.

To Miss Eliza Scidmore, the well-known authority on Japanese subjects, is due the credit for the cherry plantings in Potomac Park. The suggestion was made by



"KWANZAN"—Handsomest of the Double-Flowering Varieties, Deep Pink with Bronze Leaves

were planted. This was in 1912, and the two thousand trees then planted have found a very congenial home.

The usual time for the appearance of the first flowers of the earliest blooming variety is early in April, but the beginning of the flowering period varies from the last week in March to the middle of April or after, depending on the seasons. About the time the first variety begins to drop its petals, others, including the double-flowering varieties, begin to open their flowers, and not until about the first week in May has the flowering period practically closed.

There are twelve varieties in the Potomac Park cherry collection, and they differ greatly in color and degree of doubleness of flowers, habit of growth, and time of flowering. All of them, however, are beautiful in their own way and represent the best of the large number of varieties known to Japanese horticulturists. Each year, during the early spring months, when they are in full bloom, an ever-increasing multitude visits Potomac Park for the pleasure of seeing these huge bouquets of bloom.

Dr. T. Tanaka, an eminent Japanese botanist, made an intensive study of the Potomac Park cherries a few years ago, and the varietal names given in this paper are based on his conclusions. An excellent reference book is Mr. E. H. Wilson's "Cherries of Japan," which is a systematic treatment of the several species of *Prunus* to which the flowering forms are referred.

The usual method of propagating the several varieties is by budding or grafting. In Japan the stock commonly employed for this purpose is the *Mazakura*, a single-flowered, white flowering variety which roots readily

her during an afternoon's visit to Dr. Fairchild's home. Through arrangements made by Miss Scidmore with Mrs. Taft, then in the White House, the mayor of Tokyo, and Dr. Jokichi Takamine, shipments of trees were sent from Japan, and the three miles of flowering cherries now bordering the Speedway and the Tidal Basin

from cuttings. The trees in the Potomac Park collection are probably grafted on this stock. While the double-flowered varieties do not mature seeds, the single-flowered forms often produce a few, and they may be propagated in this way if desired.

As already mentioned, these cherries vary considerably in time of flowering. One of the most popular, and the first to bloom in Potomac Park, is the *Yoshino*, of

which over eight hundred trees form an almost unbroken circle around the Tidal Basin. The contrast between the light-pink, single flowers and the leafless gray branches is exceptionally charming. The tree is quick growing, 25 to 45 feet high, and of wide-spreading habit, with thick branches and pale-gray bark. The leaves, strongly nerved and sharply serrate, are hairy beneath when young. The slightly fragrant single flowers, usually appearing before the leaves, are in clusters of three to five and vary in color from white to pink. The fruit is globose and shining black. In a normal season the *Yoshino* flowers late in March or early in April, and the flowers remain attractive for about two weeks.

In the vicinity of Tokyo, Japan, there are said to be more than fifty thousand trees of this variety planted in the streets, parks, and cemeteries, and its flowering is made an occasion for a national holiday by imperial decree.

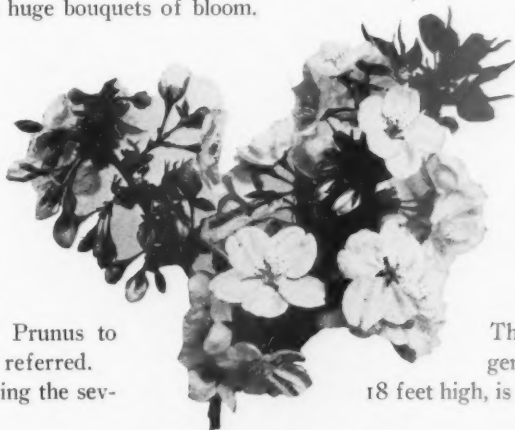
Owing to its vigor and rapidity of growth, the *Yoshino* should prove one of the most popular of the flowering cherries for most sections of the United States, except where scanty rainfall or extremely cold winters are the rule.

Four or five days after the *Yoshino* has reached the height of its flowering, the hundred trees of *Shirayuki*, planted mostly along the east drive, have begun to bloom.

This variety resembles *Yoshino* in a general way, although the tree, about 18 feet high, is of erect habit, with dark brownish-gray bark, and the flowers are pure white, single, cup-shaped, about 1½ inches wide, two or three in a cluster, with hairy peduncles. With its characteristic habit of growth and



"TAKINIOI"—Fragrant and Pure White, the Name in Japan Signifying "Flowing Cataract"



"ARIAKE"—A Very Striking Variety, Which Develops Its Leaves at the Same Time as the Flowers. The Latter are Large and Lovely, White Tinged With Rose, and are Very Fragrant

numerous flowers, this makes a particularly attractive form.

Another variety is also in bloom along the east drive at this time; this is the *Ariake*, of which the sixty or more trees present a very striking appearance. Unlike the two already considered, this variety develops its leaves at the same time as the flowers. The tree is nearly 20 feet high, upright-spreading in habit, with gray bark, and the young leaves are greenish bronze. The single or semi-double flowers are fragrant, white with a rosy tinge, about two inches wide, and borne in threes. The effect of the bronze-colored leaves among the rosy-white flowers is most pleasing.

Resembling the *Ariake* in general, but with a more upright habit, is *Mikurumugaeshi*, which blooms about the middle of April, just after *Ariake*. In Japanese this name signifies "looking back from the carriage," implying unusual beauty. Fifteen trees of this cherry are scattered along the east drive. They are about 20 feet high, upright in habit, with dark-gray bark marked with numerous reddish-brown areas. The pinkish-white flowers, single or nearly so, are very numerous and $1\frac{1}{4}$ inches wide; they are borne in threes, on long drooping stems. They are certainly very handsome trees. It is said that there is a road in Japan which makes a deliberate loop in order that travelers may have another look at a long row of this cherry growing on the walls of an old castle.

A rather odd variety, *Gyoiko*, also along the east drive, comes into bloom nearly as early as *Mikurumugaeshi*. This cherry, of which there are nearly thirty trees, has greenish-yellow flowers; it was formerly very rare and even now is not common. The tree is not quite as high as the preceding variety and is upright-spreading in habit, with bronze-green young leaves. The semi-double flowers, $1\frac{1}{4}$ inches wide, are greenish-yellow with reddish stripes, becoming pink just before dropping. While at first sight this does not seem to be of great horticultural merit, it has a charm of its own which grows with more intimate acquaintance.

The *Fukurokuju* will readily appeal to plant lovers as one of the most beautiful of all the Japanese flowering cherries. It blooms in Potomac Park right after the middle of April, and there are about forty trees scattered along the east drive and also near the Lincoln Memorial. The tree is of upright habit, with gray bark and branches from about six feet above the ground. The young leaves are bronze-green, appearing with the flowers, but almost hidden by them. The abundant double flowers are nearly two inches wide, whitish with deeper pink margins, and clustered at the ends of the branchlets. The tree when in full bloom suggests a huge, tight bunch of roses and deserves to be much more widely grown than is the case at present.

Over a hundred trees of the *Ichijo* cherry are planted along the east drive; they are generally in full bloom by

the third week in April. This is an excellent double-flowered form. The tree is upright or slightly spreading, about 18 feet high, with grayish bark. The young leaves, appearing with the flowers, are bronze-green. The semi-double flowers, borne in threes, are nearly two inches wide and pale pink, becoming nearly white with age. The pistils are characteristically leaflike. This is a very attractive and free-flowering form.

In the opinions of at least two horticulturists who have worked extensively with these cherries, the *Kwanzan*, or *Kanzan*, as it is often called, is the handsomest of all the double-flowered varieties. There are nearly two hundred and fifty of these planted in Potomac Park, especially in the vicinity of Hains Point, where they bloom just after the middle of April. The upright-spreading tree is 15 to 20 feet high, with gray bark. The leaves and flowers appear simultaneously; the young leaves are deep bronze-green. The buds are red, and the double flowers, about two inches wide, are produced in threes and fours and are deep pink with reddish-green calyxes.

In rather sharp contrast to *Kwanzan* is *Takinioi*, a modest little white variety whose free-flowering habit is reflected in its native name, which signifies "flowing cataract." This is represented in Potomac Park by fifty trees, scattered all along both drives. The tree is of spreading habit, with brownish-gray bark. The single, white flowers, a little over an inch wide, are very freely produced and very fragrant and are borne in clusters of three or four.

Another variety, which is among the finest of the Japanese cherries, is the *Fugenzo*, also known as *Kofugen*, *Benifugen*, or *James H. Veitch*. Under the last name it is now carried in the trade by one or two nurseries in this country. The tree is of spreading habit, with a flat crown and brownish-gray bark. The young leaves, which appear with the flowers, are dark bronze-green. The double flowers, about $1\frac{1}{2}$ inches wide, are pink, becoming paler in the center with age; the calyx and peduncle are reddish-green. From the center of each flower extend the characteristic green, leaflike pistils.

Somewhat similar to the *Takinioi* and *Ariake* varieties in general appearance is *Jonioi*, a white-flowered form which blooms comparatively late, usually toward the end of April. Nearly one hundred and fifty trees of this variety are planted around Potomac Park. In habit the tree is spreading, with gray bark, and the leaves, which appear just after the first flowers, are brownish when young. The flowers are single, $1\frac{1}{2}$ inches wide, pure white, and said to be the most fragrant of all the flowering cherries. The Japanese name means "supreme fragrance."

Japanese cherries constitute a real contribution to American horticulture, and their further study and cultivation is well worthy of wider consideration.

"American Forest Week"

THIS is the name which President Coolidge, by official proclamation, will give to the week of April 27 to May 3. During that period the American people will be asked to give common thought to the forest problems of their nation. The name "American Forest Week" will replace "Forest Protection Week," which for the past five years has been set apart by the President of the United States as a time for the people to consider the menace of forest fire.

The new name has been adopted as the result of a broad demand that the forest interests of the week be broadened to include all phases of forest conservation and reforestation. The larger movement is being sponsored by five organizations—The American Forestry Association, General Federation of Women's Clubs, The Izaak Walton League, the National Lumber Manufacturers Association, and the United States Forest Service. Former Governor Frank O. Lowden, of Illinois, is Chairman of the organization which has been created to carry out the purposes of the week, and serving with him as Vice-Chairmen are Mrs. John D. Sherman, Denver, President of the General Federation of Women's Clubs; Mr. George D. Pratt, New York, President, American Forestry Association; Mr. Frank Wisner, Laurel, Miss., President, National Lumber Manufacturers Association; Colonel William B. Greeley, Washington, Forester, U. S. Forest

Service, and Will H. Dilg, Chicago, President, Izaak Walton League. An Executive Committee, consisting of representatives from some thirty national organizations, is being appointed. Mr. Edgar P. Allen, of the National Lumber Manufacturers Association, Washington, D. C., will act as managing director, and Miller Hamilton, of the Forest Service, will be secretary.

This Committee, under the able leadership of Mr. Lowden, asks the help and co-operation of every organization in the country having patriotic interest in our forest resources. It urges clubs, trade and professional organizations, clergymen, school teachers and the press to bring home to all Americans their personal responsibility in restoring and perpetuating our forests.

Forest fire protection will continue to be urged as a matter of prime necessity, but reforestation, utilization, forest recreation and the conservation of wild life will be essential parts of the program for American Forest Week. The Committee having the work in charge expects to make the occasion this year far outstrip any previous effort. Much of the work to be done is in the field of publicity, and contributions for the necessary expenses are needed. The time is short. Send your check to Edgar P. Allen, Managing Director, 402 Transportation Building, Washington, D. C.



A New Fire-Fighter

BY R. G. THACKWELL

AN ENTIRELY new fire-fighting unit, already proven of great value in combatting forest fires, and of particular service in rough country, has recently been invented to be carried on the side-car of a motorcycle. The equipment, which can be moved at great speed to the location of the fire, includes a powerful pump, a long length of hose, two chemical tanks, shovels and spades, axes, and various other fire-fighting implements. They are compactly placed on the side-car so that complete equipment for fire fighting can be carried. Usually two men constitute the force operating this unit. A man is carried on the back seat of the motorcycle. When in use, a long length of hose reaches from the pump to the supply of water, which may be a stream. This water is pumped through another long section of hose, which is handled by the firemen and which hurls a stream a long distance. This newest member of the "protection force" was invented by Jack Fletcher and is marketed by the Evinrude Motor Company.

Strong Public Demand For More National Forests Crystallized by the Association's Program

THE American Forestry Association's proposal of a ten-year program for the establishment of additional National Forests in the principal timber-land regions west of the Great Plains continues to gather support. Sentiment favorable to the McNary-Woodruff Bill, which incorporates the necessary fiscal program, is being expressed in all sections of the country. Thus far there has been practically no opposition to the idea of the Government adopting a definite program for its work of providing adequate National Forests in the eastern half of the country, and thereby putting into effect in real earnest the section of the Clarke-McNary Act authorizing this work.

On the other hand, formal endorsements, expressions of support, and helpful suggestions for furthering the legislation proposed continue to come in from individuals and organizations broadly representative of public and industrial interests. It is not expected that Congress will take action on the McNary-Woodruff Bill this session. Indeed, it was thought best not to urge action or to ask for public hearings because of the present legislative situation and the feeling that Congress will be able to pass very few new measures. The educational value, however, of having the bill introduced and brought to the attention of the public has been well demonstrated and has prepared the way for a strong and well-supported campaign next fall. It is the plan to have the bill again introduced when the new Congress convenes, next December, and to hold hearings at which all public interests may be represented. Between now and next fall the Association will continue its aggressive educational campaign, in order that the merits of the measure may draw the maximum of support.

Among recent endorsements of the program which have been sent the Association is one from the American Association for the Advancement of Science, submitted through its Section O—Agriculture. This resolution is so directly to the point that it is being printed herewith.

"WHEREAS the need of a forest policy for the nation has been recognized by the Congress of the United States in the passage of the Clarke-McNary Act, which provides, among other things, for the purchase by the Federal Government of lands for timber production as well as for watershed protection;

"WHEREAS the purchases of forest lands under the Clarke-McNary Act should be made in accordance with a definite plan providing for the necessary expenditures over a period of years;

"WHEREAS a program has been suggested by the American Forestry Association calling for the purchase of 8,000,000 acres over a period of ten years, involving the expenditure of \$3,000,000 per year for the first five years and \$5,000,000 per year for the second five years: be it

Resolved, That Section O (Agriculture) of The American Association for the Advancement of Science urges the adoption by the Congress of the United States of an adequate program covering the acquisition of forest lands by the Federal Government,

with the necessary appropriations, either in accordance with the program of The American Forestry Association or such modification as will fulfill the same purpose."

Another strong endorsement has just come in from the Associated Advertising Clubs of the World. The exact resolution is here introduced as typifying the broad public interests which business and trade organizations recognize in the movement:

"WHEREAS we believe that the more rapid extension of National Forests in the United States is exceedingly important, as producers of lumber and pulp wood, as recreational areas and protectors of streams and rivers, as game refuges and hunting and fishing grounds, as centers of forest-fire protection and as demonstration areas in forest conservation: therefore be it

Resolved by the Executive Committee of the Associated Advertising Clubs of the World, That we endorse the plan advocated by The American Forestry Association to provide a system of National Forests in the eastern half of the United States."

Members of the Association and all individuals and organizations interested in seeing the eastern half of the United States provided with a more adequate system of National Forests are urged to continue their work in behalf of this program.

The organizations which have sent in endorsements up to the date this issue goes to press are listed below. Are those of which you are a member in this list? If not, yours is the opportunity to bring the project before them for consideration and endorsement.

American Association for the Advancement of Science.	Delaware State Federation of Women's Clubs.
American Game Protective and Propagation Association.	The Hickory Handle Association.
Appalachian Mountain Club.	Lake Placid Club, Essex Co., New York.
Associated Advertising Clubs of the World, New York, N. Y.	Society of American Foresters.
National Association of Wood Turners, Inc.	Society for Protection of New Hampshire Forests.
National Conference of State Parks.	Western North Carolina, Inc.
National Council of Furniture Associations.	Furniture Manufacturers of Evansville, Indiana.
The National Grange.	Camp Fire Club of America.
Permanent Wild Life Protection Fund, New York Zoological Park.	National Parks Association.
Empire State Forest Products Association.	Connecticut Forestry Association.
South Bend Chamber of Commerce, Indiana.	Massachusetts Forestry Association.
St. Louis Chamber of Commerce, Missouri.	New York State Forestry Association.
Superior National Forest Recreation Association.	The Woman's Club of Centerville, Michigan.
Selma Chamber of Commerce, Alabama.	American Nature Association, Washington, D. C.
The Barre Chamber of Commerce, Vermont.	Southern Forestry Congress, Inc.

Association Progress

Annual Report of Secretary Shows Substantial Growth in the Activities and Influence of the American Forestry Association

For the information of the members of The American Forestry Association, there are printed below essential extracts from the annual report for 1924 of the Executive Secretary, Ovid M. Butler.

"The year just closed has been one of substantial growth for the Association. Not only has the financial condition of the organization been strengthened, but its educational activities have been extended and its membership has been materially increased.

"The budget approved a year ago contemplated expenditures not to exceed \$75,700, exclusive of the cost of the Forester. This budget was predicated on an estimated income of \$72,025 and a possible deficit of \$3,675. Actual expenditures during the year aggregated \$75,550.36, or approximately \$150 less than the approved budget. Actual receipts amounted to \$75,595.48, a surplus on the year's operation, exclusive of the Forester's work, of \$45.12. The actual income exceeded the amount estimated by \$3,570.48. . . .

"Of the expenditures during the year, \$9,284.93 were for membership solicitation. If the returns from this work were credited to the year's activities, the operating account would show an additional surplus of \$8,036.39. The accounting system, however, credits as 1924 income only that portion of new membership dues as should be properly allocated to the year. . . .

"The work of the Forester, which has heretofore not been included in the budget, entailed expenditures of \$3,900.26, while the Forester's fund income during the year amounted to only \$1,157.45, leaving a loss in the Forester's fund account of \$2,742.81 on the year's work. . . .

"The membership of the Association on January 1, 1925, was 14,298, which represents a gross increase during the year of 3,293. The month of December, 1924, shows the greatest number of new members in the history of the Association, the number being 829. This month also holds the record for the amount of paid advertising carried by the magazine, totaling 12 pages, with gross receipts of \$1,795. . . .

"The improvement in the financial affairs of the Association during the past two years may be better shown by a comparison of accounts as of January 1, 1923, when the present organization took charge, and January 1, 1925:

<i>Paid membership, January 1, 1923</i>	10,829
<i>Paid membership, January 1, 1925</i>	14,298
<i>Surplus, January 1, 1923-----</i>	\$18,949.85
<i>Surplus, January 1, 1925-----</i>	31,411.74
<i>Income, exclusive of Forester's Fund, calendar year 1922-----</i>	47,392.73
<i>Income, exclusive of Forester's Fund, calendar year 1924-----</i>	75,595.48
<i>Net return from magazine advertising, 1922-----</i>	5,472.60
<i>Net return from magazine advertising, 1924-----</i>	8,923.64
<i>Operating loss, exclusive of Forester's Fund, 1922-----</i>	16,627.30
<i>Operating surplus, exclusive of Forester's Fund, 1924-----</i>	45.12

"The most notable broadening of the Association's educational and legislative activities during the year has been the addition to the staff of Mr. Allen as Forester. As a result of his assistance, it has been possible for the Association to take leadership in making the new Clarke-McNary Forestry Act fully effective, promoting needed forest legislation, and co-operating in forest-fire protection. The Association's bill, calling for a ten-year program of forest land acquisition, has been introduced in the Senate by Senator McNary, of Oregon, and in the House by Representative Woodruff, of Michigan. A wide publicity campaign has been conducted in connection with this measure and the public support which has been expressed for it is most encouraging. . . .

"The necessity of increasing the Federal Government's expenditures for forest-fire protection ranks in importance with the proposed enlargement of the forest acquisition work and it will continue to be one of the Association's major activities in the legislative field during 1925, as it has been during the year just closed. During the past year the Association has actively supported many other important measures and projects within its field, among which may be mentioned:

"1. The Clarke-McNary Act, which was passed by Congress on June 7, 1924, and which constitutes the most important forestry legislation in recent years.

"2. Initiation of a ten-year program for the establishment of National Forests in the eastern half of the United States and drafting of a bill, introduced in Congress on December 20, to authorize expenditures with which to carry out this program. This bill is the McNary-Woodruff Bill.

"3. Better game protection in Alaska and the bill providing for an Alaskan Game Commission, which was recently passed by Congress.

"4. Support of the National Conference on Outdoor Recreation and direct participation on a joint committee with the National Parks Association in making a survey of the recreational resources of federal lands.

"5. Advocacy of the Migratory Bird Refuge and Public Shooting Grounds Bill. The series of articles published in our magazine in support of that measure, reprinted and distributed widely, has been credited as one of the most effective of any contribution in the educational promotion of the measure.

"6. The establishment of a National Park in the Southern Appalachians, for which a bill is now pending in Congress.

"7. The movement to co-ordinate industry and the public in a definite program to eliminate waste in the use of our forests and to expand research in forest utilization.

"8. Acquisition and development of forests and parks in and adjacent to the National Capital adequate to the needs of the thousands of people from all parts of the country who visit Washington annually; the establishment of a National Arboretum as proposed by the Pepper Bill.

"9. Settlement of the Kaibab deer problem along sound and sensible lines. Through its magazine, the Association was, I believe, the first to publish an authentic statement of that problem.

"10. Stimulating public interest in the practice of forestry by publishing outstanding examples of individuals and companies who are actually demonstrating the feasibility of conservative forest management.

"11. Legislation designed to make it possible for the Federal Government to acquire Bright Angel Trail, in the Grand Canyon National Park. . . .

"12. Support of the Upper Mississippi Wild Life Refuge, which became a law last June.

"13. Directing public attention to the serious situation of the Yellowstone elk during the present winter, due to the great western drought and a consequent shortage of feed.

"14. Editorial promotion of forest legislation in different states and direct assistance whenever our facilities permitted; advocacy of more town and state forests.

"There has likewise been a broadening of our educational and publicity work during the year. A set of forest-fire posters and stuffers in color were printed and distributed practically at cost. These attracted wide attention and were in good demand because of their unusual power in arresting

Our Fiftieth Birthday

Unselfish Service to the Great Cause of American Forests Is Keynote of Association's Semi-centennial

Fittingly marking the fiftieth year in the life of The American Forestry Association, the semi-centennial meeting held in Chicago on January 22, 1925, was one of the most notable and enthusiastic annual gatherings in the Association's history. The spirit which prevailed throughout the meeting was well expressed in one of the resolutions adopted, wherein the Association rededicated itself to active, helpful, and unselfish service to the great cause of forestry in all its aspects, and reaffirmed its readiness to co-operate with all agencies in this patriotic movement.

The meeting was held at the Hamilton Club and embraced a morning and afternoon session and a banquet in the evening. The Hamilton Club, the Union League Club, and the Illinois Forestry Association were local hosts to the assembled delegates, of which more than two hundred were in attendance. From the opening of the morning session until the close of the evening dinner, the meeting moved rapidly and was characterized by great enthusiasm and much applause for the many distinguished speakers who were present.

During the course of the meeting announcement of the results of the election of officers for the present year was made by Colonel Henry S. Graves, chairman of the Nominating Committee. George D. Pratt, of New York, was re-elected President. The full list of new officers elected is given on page 170.

After assembling at 10 o'clock in the morning, the delegates were welcomed by brief addresses by Doctor Henry C. Cowles, President of the Illinois Forestry Association; Mr. Alexander Fyfe, President of the Hamilton Club, and Mr. William L. Hall, of the Union League Club. George D. Pratt, President of the Association, responded, and during the course of his talk reviewed briefly the fifty-year history of the Association. "It is fitting," he said, "that we pay homage with some historic references to those men and women whose loyal and patriotic energies have brought our Association to its fiftieth milestone. From their work we may derive pride and encouragement. In the face of tremendous obstacles, they advanced year by year the standard of forest conservation."

He told of the founding of the Association in Chicago in 1875, when the first call was issued for a convention to form a national forestry association. The organization formed at that meeting was given the name of "The American Forestry Association." When in 1882 the American

Forestry Congress was organized in Cincinnati, the two organizations united under that name, which was retained until 1889, when the original name of "The American Forestry Association" was resumed, and has since been retained.

"During these early years," Mr. Pratt said, "the most notable work of the Association was in directing public attention to the need of federal legislation which would place our wide-open public forest domain under adequate protection and management."

It was largely through the Association, he said, that the forestry movement in America was started and carried forward, and to the Association's efforts the nation

In concluding his address, Mr. Pratt emphasized the great work which remains to be done, if we are to place our nation on the right side of the forest ledger. "The forest problems of this nation are not one-half, or even one-fourth, solved," he declared. "The great question as to where our future supply of wood is to come from is not yet answered. As a nation, we are still drawing upon our original forest capital at an alarming rate. We are steadily and inevitably moving into an era of wood shortage, with serious consequences to every industry of the nation."

He called special attention to the great territory east of the Great Plains, where our original forests are all but gone and where we are confronted with the inescapable fact that from now on we must grow our wood as a crop or go woodless.

Despite the present situation, Mr. Pratt expressed an optimistic view of the future, calling attention to the fact that on every hand there is evidence of gratifying progress in forestry on the part of not only the Federal Government and many of the states, but lumber and wood-using industries, commercial and public-service organizations, and private individuals. He expressed the belief that at no time in our history has the public been more interested in forestry or its mind more open to action than at the present time. The outstanding task to be undertaken he believes to be the restoration of forest growth on the 350,000,000 acres of cut-over forest land, most of which is east of the Rocky Mountains.

This problem, he said, must be worked out on the principle that forest restoration must be profitable and not confiscatory to the private individual. The menace of forest fires must be eliminated, forest taxation must be adjusted, and other conditions created so that private capital will be attracted to our cut-over lands as offering reasonable investments.

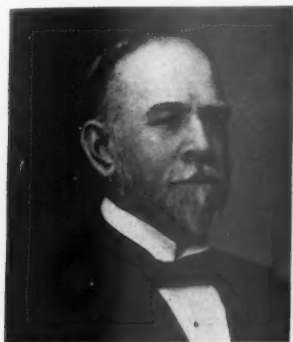
He called attention to the Association's program for a ten-year federal policy of forest land acquisition in the East, pointing out that with a well-distributed system of National Forests throughout our larger forest regions, to demonstrate what can actually be accomplished by fire protection and reforestation, the way will have been opened to interest private capital in these lands. This program, he said, "is in line with the spirit and objectives of the Clarke-McNary Act, passed by Congress a year ago—an act which, if we are true to ourselves and our cause, must be made 100 per cent effective."



GEORGE D. PRATT
Re-elected President of the American
Forestry Association, 1924-1925

today is in no small measure indebted for much of our forest progress, including the system of National Forests in the West, the present Weeks Law, the stimulation of state action in forestry, and the education of the public to the need of sound forest policies for states and nation. "It would be sounding faint praise indeed to say that this early work was easily accomplished," declared Mr. Pratt. "As a matter of fact, every step was bitterly opposed by so-called freebooters of the public domain. Repeated efforts were made at every turn to set back the progress of federal forestry, and many a stiff fight was waged by the Association to hold advances made."

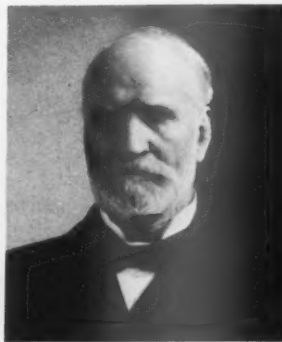
PAST PRESIDENTS OF THE AMERICAN FORESTRY ASSOCIATION



GOV. J. A. BEAVER
1888-1890



HON. STERLING B. MORTON
1893-1896



HON. JAMES WILSON
1899-1908



GOV. CURTIS GUILD
1908-1910

Other addresses during the morning session were by Dr. W. C. Coffey, dean, Agricultural Department, University of Minnesota, who spoke on the "Forest Problems of the Lake States"; Dr. Stephen A. Forbes, Chief, State Laboratory of Natural History, Illinois, "Forestry and Forest Problems of Illinois"; Mrs. Theron Colton, chairman Forestry Committee of the Chicago Woman's Club, "The Conservation Spirit of Women"; George B. Stephenson, Scout Executive, Boy Scouts of America, "Forestry Work for Boy Scouts," and Dr. C. A. Schenk, founder of the Biltmore Forest School.

The afternoon session of the meeting was devoted to the subject of how to develop under the new Clarke-McNary Act more effective co-operation in forest-fire protection. Colonel Henry S. Graves, of Yale University, was chairman during the afternoon, and in opening the session he said:

"The national movement of forestry began with the establishment of The American Forestry Association. What has been achieved is the result of a half century of effort. It has been a long, slow process of changing a nation's viewpoint toward its natural resources, the very source of its wealth and power. Foresight and great faith were needed by those men who fifty

years ago urged upon the country the need of a better handling of our forests. It was a time of rapid industrial expansion, when there were still very large bodies of untouched timber in the Eastern States and when economic conditions seemed to offer little chance for effective measures of forestry practice. But these men not only preached a doctrine of forestry, but they pointed out the first steps toward a national policy, namely, the protection of the forests owned by the nation itself.

"As we look back over the period of fifty years, we can see that certain very definite things have been accomplished in forestry. There has been established a system of National Forests and a beginning of State Forests, and it has been demonstrated that the ownership of forests by the public, well distributed and efficiently administered, is an essential feature in a successful policy of forestry for the country."

E. T. Allen, Forester of the Western Forestry and Conservation Association, speaking on the subject of "Forest Fire as a National Menace," then presented a picture of forest fire so graphic that it is printed almost in whole on page 142 of this issue. Following Mr. Allen's talk, Colonel William B. Greeley, Forester of the United States, gave a clear-cut ex-

planation of the new Clarke-McNary Forestry Act, dwelling particularly upon the opportunities which it provides for states and private agencies to co-operate with the Federal Government in providing a larger measure of forest fire protection.

The remainder of the afternoon session was devoted to a series of short, snappy talks to bring out how the states may develop larger programs of forest-fire protection, and how industries and conservation organizations may help in this movement. The speakers included Wilson Compton, Secretary, National Lumber Manufacturers Association; Herman Lunden, chairman, Michigan Conservation Commission; George W. Sisson, American Pulp and Paper Association; Chauncey J. Hamlin, chairman, National Conference on Outdoor Recreation; C. H. McDowell, chairman, Reforestation Committee, American Engineering Council; P. S. Lovejoy, Michigan Forestry Association; G. M. Conzet, State Forester of Minnesota; Edward Cochran, Michigan Conservation Commission, and E. A. Haiman, chairman, Reforestation Committee, Northern Hemlock and Hardwood Manufacturers Association.

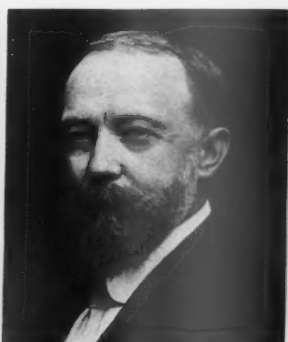
FOUR PRESIDENTS OF LATER YEARS



ROBERT P. BASS
1910-1913



DR. HENRY S. DRINKER
1913-1916



CHARLES LATHROP PACK
1916-1922



HENRY SOLON GRAVES
1922-1923

One of the most enjoyable features of the whole meeting was the banquet, held at 7 in the evening, when the former Governor of Minnesota, Hon. A. O. Eberhart, presided as toastmaster. Gov. Eberhart radiated wit and humor, and his happy faculty of introducing the different speakers contributed greatly to the enjoyment of the evening. Among those who responded to toasts was the Hon. Frank O. Lowden, former Governor of Illinois, whose address is printed as the lead article in this number of the magazine. Other speakers were Mrs. Francis E. Whitley, of the General Federation of Women's Clubs; Colonel William B. Greeley, and Richard H. Little, of the Line o'Type column of the *Chicago Tribune*.

In the course of her talk Mrs. Whitley said: "Some one expressed the opinion that the women's clubs care nothing for forestry, that they are interested only in trees—in planting memorial trees, etc. If they planted only memorial or highway trees, they would be doing a great service, not only in the added beauty with which they would enrich the country, but in the emphasis which this remarkable movement has placed on the value of the tree; it has prepared the way for the thought of the great question of forestry. Yet it is far from true that women have not sensed the importance of this issue, from its national and economic side.

"I wish that there were time to tell of the very practical things that women have done to help save, or restore, the forests; to tell of the states where more than once it was only the firm stand of

a group of public-spirited women which restrained the politicians determined to banish a state forester whom they could not use for their own purposes.

Colonel Greeley in his talk localized forestry by showing how Chicago, as the greatest lumber market in the world, is dependent upon a background of growing forests, and how as a lumber gateway to the Middle West it is vitally concerned in reforestation.

"There is just one suggestion I would like to make tonight: One line of dealing in which, it seems to me, Chicago and the interests of Chicago, which are connected with the interests of the Lake States, might take a very active part, is in the extension of public forest ownership in the Lake States. That is one of the most important and most direct ways of rebuilding the forests of that region, and restoring them to their productivity, restoring the relationship of that great timber-producing area to the vast agricultural regions around it. The restoration of much of that land involves such outlays of funds, involves possibly such hazards from fire, involves possibly such problematical returns in the yield that may be ultimately realized, that it cannot be looked for by the private owner or private industry. It is distinctly the kind of job of forest restoration that ought to be undertaken by the public, and "by the public" I mean not only the National Government, but the states, the counties, and the cities.

"We need, it seems to me, in tackling this great problem of forest restoration in the Lake States, with its difficulties, to arouse all of the interest we can in every form of

public ownership which can aid it, to the extent of its own ability, in its own way, in bringing some part of that great possible area of future timber supply back to its productivity. Our states should become largely forest owners. Each of the three Lake States has made a start in that direction. There is no reason why every state in the Great Lakes region should not be a large forest owner, and through its own efforts, through its own state funds, demonstrate its faith in the future of its own soil and demonstrate to its citizens the right methods and the right way of restoring its soil to productivity. The National Government should play its part, although I would be the last to urge that the National Government should step in and undertake public forest ownership where the state or the state and its municipalities are in the position to assume the task.

"As far as the National Government is concerned, we are ready to do our part, and we thoroughly believe in the program which the American Forestry Association has advanced as a practicable and necessary program to extend the National Forests in the Lake States, the denuded areas of the South, and in the eastern watersheds of important navigable streams. All that we can do—the National Government, the states, the municipalities—the extent that they can participate in the plan, will come none too rapidly to restore to their divine—I might say their natural—form of economic service the whole Mississippi Valley, that core of forest-producing land up there in the north on which our agricultural population, our industries, and our cities have so largely depended in the past."

Newly Elected Officers of the Association

At the Fiftieth Anniversary Meeting of The American Forestry Association, held at the Hamilton Club, Chicago, Illinois, January 22, 1925, announcement was made of the newly elected officers as follows:

President

GEORGE D. PRATT, Pratt Institute, New York City.

Treasurer

GEORGE O. VASS, District of Columbia, Vice-President of the Riggs National Bank, Washington, D. C.

Vice-Presidents

W. W. ATTERBURY, Pennsylvania.
CHARLES S. BARRETT, Georgia.
DANIEL C. BEARD, New York.
JOHN W. BLODGETT, Michigan.
JUNIOUS BROWNE, California.
JOHN D. CLARKE, New York.
GEORGE CORNWALL, Oregon.
FRANCIS CUTTLE, California.
CHARLES DEERING, Illinois.
ANSON C. GOODYEAR, Louisiana.

GEORGE BIRD GRINNELL, New York.
RICHARD LIEBER, Indiana.
FRANK O. LOWDEN, Illinois.
JOHN C. MERRIAM, Georgia.
MRS. MAUD WOOD PARK, Washington, D. C.
GIFFORD PINCHOT, Pennsylvania.
R. Y. STUART, Pennsylvania.
HENRY VAN DYKE, New Jersey.
FRANK A. WAUGH, Massachusetts.
JOHN W. WEEKS, Massachusetts.

WILLIAM ALLEN WHITE, Kansas.

Directors

Serving one year

DAVID L. GOODWILLIE, Illinois *

Serving three years

HENRY SOLON GRAVES, Connecticut.

Serving five years

ROBERT P. BASS, New Hampshire.

AUGUSTUS O. HOUGHTON, New York.

GEORGE HEWITT MYERS, District of Columbia.

These elections were the result of the official count of the ballots made by the tellers appointed by the Committee on Nominations, and consisting of Major George P. Ahern, chairman; W. R. Mattoon, and B. A. Chandler.

* Unfortunately Mr. Goodwillie's death occurred during the period of the balloting.



For Spring Bloom

THE WHITE FLOWERING DOGWOOD (*Cornus florida*)—Well known and useful in all plantings. We offer standards 8 to 14 feet with 5 to 8 foot clear stems for garden work. No better medium-sized tree for the purpose.

Standards, 8 to 9 feet @ \$7.50, 9 to 10 feet @ \$10.00, 10 to 12 feet @ \$12.50. Heavy, 12 to 14 feet, \$15.00 each.

THE DOUBLE FLOWERING WHITE DOGWOOD (*Cornus fl. pl.*)—NEW, and one of the best introductions in late years. The eight-petaled bloom comes just a little later than *Cornus florida* and lasts twice as long. Flowering sizes: 7 to 8 feet @ \$10.00, 8 to 9 feet @ \$12.50 each.

THE SINGLE VIBURNUM (*V. tomentosum*)—Follows the Dogwood in bloom and should be in your plantings. 3 to 4 feet @ \$1.00, \$6.00 per 10; 4 to 5 feet @ \$1.50, \$10.00 per 10.

THE SWEET MAGNOLIA (*Magnolia glauca*)—Better than the Chinese types in foliage and perfume. Rich, deep green foliage, glaucous beneath; flowers of ivory white. 4 to 5 feet @ \$6.00, 5 to 6 feet @ \$7.50, 6 to 7 feet @ \$8.50

THE SIBERIAN HOLLY (*Ilex serrata*)—Brilliant in its wealth of red fruit holding after the foliage drops; worth planting. 3 to 4 feet @ \$2.00, \$15.00 per 10; 4 to 5 feet @ \$2.50, \$20.00 per 10.

A discount of 5% on all orders for the above
that mention this advertisement.

ANDORRA NURSERIES, INC.,

Chestnut Hill, Philadelphia, Penna.



PLANT Nut Trees for beauty, shade and profit. That Nut Trees thrive in any climate we have proved by successfully growing them at Glenwood, where temperatures drop to 15 degrees below zero. We offer hardy specimen Walnuts, Butternuts, Beeches, Filberts, Almonds, Hickories and Chestnuts, ranging in height from 2 to 10 feet for orchard, garden or lawn planting.

Write for our Free Illustrated Catalogue "S" describing all kinds of nut and fruit trees, berry bushes, evergreens and shade trees, ornamentals, roses, perennials and flowering shrubs. We make the plans and furnish the stock for back-yard gardens or the landscaping of a hundred acres.

GLEN BROTHERS, Inc.

Nurserymen and Landscape Architects

GLENWOOD NURSERY

Rochester New York

Bobbink & Atkins

Visit
Nursery



Ask for
Catalogs

ROSES SPRING PLANTING

An illustrated complete list of Roses that we shall have for Spring Planting is now ready to mail. Many Roses are beautifully illustrated in color, among them Rev. F. Page-Roberts, Star of Persia and other new and unusually attractive varieties. This list of Roses is the most complete and unique ever offered. We have several hundred thousand rose plants ready to ship to any part of the country where Roses can be planted at this time. Your choice can be made from this list, mailed upon request.

HARDY HERBACEOUS PLANTS

A complete catalog of Old-fashioned Flowers, Hardy Chrysanthemums, Delphiniums, Oriental Poppies, Trollius (St. Bruno's Lily), Astilbes, New Anchusas, Japanese Anemones, New Heucheras, New Phlox, Hardy Asters, Rock Garden Plants in large variety. Beautifully illustrated in color and black. It contains an alphabetical table, indicating Flowering Period, Height and Color.

EVERGREENS, TREES, SHRUBS AND VINES

An illustrated catalog of Nursery Stock, such as Evergreens, Evergreen Azaleas, Evergreen Shrubs, Deciduous Trees, Flowering Shrubs, Hedge Plants, Hardy Vines, Fruits and House Plants.

POT-GROWN PLANTS AND VINES

We have a pamphlet of Pot-grown Vines and Climbers for every home and garden.

SPECIMEN TREES

We have many in large variety. Shall be pleased to give list on application.

LILACS

We have a special pamphlet of Lilacs, which we shall be pleased to mail to anyone interested.

In your request for catalog, it is important to state definitely what you intend to plant.

BOBBINK & ATKINS

NURSEYMEN and FLORISTS RUTHERFORD, N. J.

The Challenge of Woodless Lands

(Continued from page 132)

to me soon afterward to take all of the sandy ridges upon my farm—and there were a number of them—and to plant them with white-pine seedlings. I proceeded with that policy a number of years. I began about twenty-two years ago, and today one of the most gratifying features of my farm is these forests. These trees I planted as little seedlings, and I remember that I planted them cheaply, and I became so skilled in the work that I could plant them at a cost of about three-quarters of a cent each. I planted 50,000 each spring for a number of years. The other day I measured some of these trees that I planted first for the purpose of this meeting. The largest were thirty to thirty-two feet tall, six to eight inches in diameter—the most beautiful things in the whole Mississippi Valley, under the perfect blanket of snow that we have had this winter—those pine trees coming up through the snow and into the brilliant, glistening winter sunshine we have had out there. That can be done everywhere at a minimum of cost.

When we are young we say to ourselves, "What is the use? They will grow so slowly that we will derive no benefit from them." That may seem so to you, my young friends; but let me give you a little advice. It will seem long to you now before those trees become large enough to afford you any joy or comfort, but in twenty-five years from now the time will seem brief indeed since you planted those little seedlings. Just keep that in mind. You will find that you cannot have any more satisfactory companions than the trees that you have planted with your own hand and seen growing up year by year. At least I have no greater joy than that, and I like them. Of course, it is a pine forest now of somewhere between seventy-five and eighty acres in extent, and I like to think of the time when these hills, when these sand ridges, when these waste places, will be the most fruitful and productive portions of my farm, because I have always had an idea that no man holds a good enough title to an acre of farm land anywhere that he has any right to bequeath it at the end of his life in any less fruitful condition than it was when he came into its possession. It will afford you infinite comfort when you have advanced in years, as I have and when your perspective lessens in extent, to have a constantly expanding retrospective, framed by trees that your own hand has planted years ago.

I like to think that, in my old age, I can spend some of my time in the shade of these trees that I have seen spring from the tiny seedlings to great, spreading forest trees. I am getting a little satisfaction out of that now. I believe it is possible to create such a sentiment in America that every farm shall have a little forest like that. It will cost the owner practically nothing and will be a growing interest and will increase in value as the years come and go.

I am glad to have been here today. I came in because I wanted to learn, not because I thought I could teach

(Continued on page 176)

George Lawler, Bulb Grower, Dept. A

Gardenville, Tacoma, Washington, U. S. A.

BY PERMISSION

A Pleased Customer

2200 Speed Lane,
Louisville, Ky.

April 20, 1924.

Mr. George Lawler,
Gardenville, Tacoma, Wash.

DEAR SIR:

Last summer I bought bulbs of your Daffodils, "Queen of the Chalice Cups." They are so beautiful, standing on stems 18 inches high, that I wanted to tell you how I am enjoying them.

They have been blooming for two weeks and are still so fresh and lovely. I have had nothing this spring as delightful as these flowers.

I have them on a woodland path, and next fall I want more for another path. I want to thank you for introducing me to these exquisite flowers.

Yours very truly,

MRS. MILTON SMITH, JR.



Narcissus
Barri
Conspicuous

"QUEEN
of the
Chalice Cups"

Narcissus, Jonquils and Daffodil Bulbs

Spanish, Dutch and English Iris Bulbs

BULBS FOR NATURALIZING AND BORDERS

CONSPICUOUS

\$45.00 per 1000, \$6 per 100

This "Queen of Chalice Cups" is a general favorite and one of the best of the section. A strong, robust grower and very free late bloomer. The flowers are large, of refined and beautiful form and splendid substance, lasting in water longer than almost any other narcissus. Broad, soft petals; short, wide-mouthed cup of yellow with a distinct rim of orange-scarlet.

WRITE TO

George Lawler, Bulb Grower

Dept. A

Gardenville, Tacoma, Washington, U. S. A.

As Permanent as the Trees

—and as hardy—freezing does not hurt them—after becoming established.



**GARDEN FURNITURE
OF THE BETTER SORT**

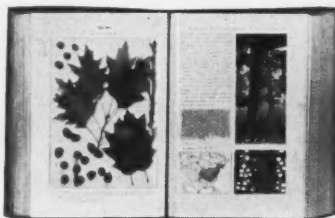
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Hough's Handbook of Trees

Is photo-descriptive and enables one to identify all of the trees east of the Rocky Mountains and north of the Gulf States at any season of the year. 891 illustrations.



The HANDBOOK opened at Red Oak. Two pages facing each other are devoted to a species. "Its illustrations almost carry the scent and touch of the original."—*New York Times*.

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Lowville, New York



BOOK REVIEWS

TIMBERS OF TROPICAL AMERICA. By Samuel J. Record and Clayton D. Mell. Yale University Press, New Haven, Connecticut. Price, \$10.00.

This is the first book, in any language, to cover the whole field of tropical American woods and forests. The information contained in this volume is based upon first-hand observation, the product of years of study and investigation by the authors in the forest, in the trade, and in the laboratory. A concise, but clear, picture is given of the forests of tropical America and the important problems involved in their utilization, including the possible extent to which they may replace our native woods.

The trees of 75 different families are described, with reference to their size, abundance, and peculiarities, as well as the appearance, properties, and uses of their woods. There are full and detailed descriptions, following a uniform outline, of 180 representative woods, while several times that number are more briefly considered. A highly useful feature is the listing of all the trade and vernacular names of every wood. This book will be of service to lumber dealers, manufacturers of wooden products, importers and exporters of forest products, investors and bankers interested in tropical American business, scientists, students and tourists who wish information about the resources of Latin America, railway officials interested in tropical woods for cross-ties, architects and builders, and all others who wish to learn more about tropical woods.

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LESLIE E. DOOLITTLE'S
DAHLIAS

Are the World's Finest

Introducer of—

"The Wizard of Oz," "Hong Kong," "Earle Williams,"
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"Best by Test"



A Typical Forest Planting

WE CAN DELIVER A FOREST

of Pines and Spruces 2 to 3 feet high transplanted and healthy as low as \$40.00 per hundred—delivered. Write for information. SMALL SEEDLINGS and TRANSPLANTS by the MILLION.

Write for our complete list—just published.

Some Seeds		Some Transplants	
	(Per lb.)		(Per 1000)
Larix Europea.....	\$1.60	Picea Alba, 4 yr. Transplants.....	\$25.00
Picea Alba.....	3.65	3 yr. Transplants.....	18.00
Pinus Resinosa.....	16.00	Pinus Resinosa, 3 yr. Transplants..	35.00
Picea Excelsa.....	1.35	Tsuga Canadensis, 2 yr. Seedlings..	20.00
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Special Prices in Quantity

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NEW YORK CITY

ESTABLISHED IN 1878

MARINE STRUCTURES, THEIR DETERIORATION AND PRESERVATION. Compiled by William G. Atwood and A. A. Johnson. Published by the National Research Council, Washington, D. C.

Believing that data relating to the deterioration and preservation of marine structures will be of definite value to the engineer, the results of work done by the Committee on Marine Piling Investigations of the Division of Engineering and Industrial Research of the National Research Council has been compiled by the authors. While further study is contemplated on the several phases of the problem of protecting structures in sea-water, the work of the committee has been brought to a stage warranting compilation of results. Specimens collected from a wide geographical range were studied and careful experimental work done. The report is attractively written up, with the information readily available, and the volume not only provides authoritative advice for



Well-groomed trees produce fine, large, juicy fruit, free from insect blight, in large quantities, of fancy market value.

YOUR TREES— the care they should have:

Inspection—free.

Pruning—a simple operation for an expert.

Spraying—simple also.

Bolting and bracing—often saves the tree.

Fertilizing } adds the final
Mulching } touch of success.

Tree Conservation

Landscape Foresters, Ltd., are specialists in all tree conservation work. They have the most highly approved method of treating damaging holes and decayed spots, efficiently making the trees sound with *Nuheart* (that highly compressed cork filler that was evolved during the World War). This simple treatment saves fine trees for future generations.

OLD ORCHARDS Made YOUNG AGAIN

Whether you have *one* old tree in your home grounds (that lends a picturesque touch of character to your home surroundings) or a *thousand* trees to produce a fine crop of large, luscious apples—the treatment is the same.

Landscape Foresters, Ltd., specialists in the care of orchard trees, have mobilized their forces for *orchard work* during March (and early April), and will give quick, efficient service at economical prices.

The March overhauling that every successful orchard must have will give you—1st. Large, luscious fruit in quantity; 2nd. Shapely, full-foliaged trees; 3rd. Prolonged life for the orchard, and this at a purely nominal expense.

Apple trees properly cared for should bear for two generations of men. Many a hopeless-appearing orchard has been made beautiful and prolific, adding materially to the value of properties.

Inspection and Suggestions made without Charge

Full information will be sent you promptly upon request by mail, telephone or telegraph. Immediate application advised for March service.

LANDSCAPE FORESTERS, LTD.

52 Vanderbilt Avenue
NEW YORK

Telephone 82 79 Vanderbilt Next to Grand Central Station



Compare this poor fruit, produced in very small quantities, in an uncared-for orchard, with the above. Crop practically worthless.





Let Nature Improve Your Trees

NATURE provides a ground cover of shade-loving small plants and leaves which retain moisture and supply humus to her favored spots for the finest and most luxuriant trees.

Man is inclined to "clean out," leaving closely cropped areas, where the trees thirst and produce scraggly growth.

The wise man follows Nature's plan and provides naturalistic plantings of those most charming little evergreen ground covers like *Pachysandra*, Japanese spurge—the wonder plant that gives at very little cost a mat of cool green carpet six to eight inches deep, which is hardy and evergreen always.

Pachysandra requires no care after it is started, and will spread definitely to your great delight, adding charm to your home grounds or large acreage of woodland park. It makes the best border for paths and roadways in sun and shade, and under all shrubs and evergreens it is without a peer for sturdy growth and beauty. Saves its cost many times over in labor of lawn mowing under trees. Simple planting directions will be sent you.

State approximate area to be covered.

We supply woodland covers, including the rhododendrons to vary the picture. Wholesale prices on *Pachysandra*, on large orders, are less than 5c. a plant for a green carpet of *Pachysandra*.

ORDER NOW WHILE SPRING PLANTS ARE AVAILABLE

Sample Green Carpet of *PACHYSANDRA*

25 x 50 feet (5,000 one-year plants), \$200

Let us estimate on ground covers by the acre.

All about ground covers and simple planting directions may be obtained by simply addressing

HUGH B. BARCLAY

Wholesale Grower of Ground Cover Plants

NARBERTH, PENNA.

the solution of some of the troublesome problems of the engineering profession, but it is an outstanding contribution to the cause of better utilization of the millions of feet of wood used annually in marine structures.

THE CAMPING IDEAL. By Henry Wellington Wack. Published by the Red Book Magazine, New York City.

In this, his second volume on cultural camps, the author discusses the American camp movement from a small beginning in New England to its growth into the legion of organized summer camps which dot the country. Mr. Wack reports his 1923 and 1924 activities, which included a survey of 364 boys', girls', and adults' camps, and includes in his report personal glimpses of New England, Adirondack, Catskill, and Pocono Mountain and mid-western camps. His breezy, narrative style is in keeping with the real out-of-doors spirit of his subject, and perusal of the book cannot fail to inspire the reader to more vigorous and forceful utilization of leisure hours.

WEBSTER'S FORESTERS' DIARY AND POCKET-BOOK, 1925. Timber Trades Journal Office, William Rider & Son, Ltd., 8-11 Paternoster Row, London, E. C., 4. Price, 3s. 6d. net.

An attractive pocket memorandum book for 1925, issued by the *Timber Trades Journal*, London, England, as "Webster's Foresters' Diary." The book is well bound and is equipped with inside pocket and back pencil. There are some fifty pages of hints to the home timber merchant, the landowner, the forester, and the nurseryman; brief articles on rating of woodlands, felling and conversion of timber, methods, and cost of planting, etc., written by Mr. A. D. V. Le Sueur, curator of the Forestry Collection of the Surveyors' Institution. A complete list of foresters and assistant foresters on the various estates in all parts of the United Kingdom is appended.

The Challenge of Woodless Lands

(Continued from page 172)

you anything on the subject, and I have learned very much. It has been a profitable day for me.

I came because I believe in this organization. I want to see it strengthened. I want to see it grow. I want to see the next half century as successful as the past. I want to see the momentum it has acquired continue to increase until, when our successors meet, which I hope will be here in a half century, the once great forests of the Lake States shall have been restored again, and on that celebration—I don't expect to be here myself, but for those of you who will be here—I offer my felicitations.

AMERICAN EVERGREENS

Flowering: Rhododendrons, Kalmias, Azaleas.
Conifers: Hemlocks, Pines, Cedars.

Formal: Boxwood, Euonymus (your choice of 3 sorts), Yews.

SAMPLE COLLECTIONS
1st Group, 1 of each . . . \$2.00
2nd Group, 1 of each . . . \$1.50
3rd Group, 1 of each . . . \$3.00

All good plants, 1-ft. size, balled and burlapped, by express your expense.

Many other beautiful natives grown high on these Alleghany slopes and hardy anywhere.
Price list sent on request

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**REFUSE CAN
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For Kitchen and Nursery.
Foot pedal to lift lid.
Both hands free. To empty, just lift can from frame. Made strongly and finished in snowy Baked Enamel.

6.50 (West of Mississippi River, add 50 cents)

Hygeia Can Co., Inc.

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Mention AMERICAN FORESTS and FOREST LIFE—It Helps

Japanese Roseflowering Cherries for Your Own Home Grounds

THE Japanese flowering cherry so excels all other flowering trees that the demand for it in America could not be satisfied for years, and it is only lately that our own soil has begun to produce several large collections, of which all are public possessions except one—that of Mr. A. E. Wohlert at Narberth.

Cherry groves in bloom make dramatic appeal to the sense of beauty, and park commissioners have found them a powerful lever in securing public support for larger appropriations. Once the groves are started, they are an irresistible drawing card to the parks and an asset to the cities.

Why not grasp this opportunity?

THE Flowering Cherries of Japan are the famous feature of our beauty-loving nation.

Wondrous delight you may obtain for your family and your friends by having Japanese Flowering Cherries on your own home grounds. Cherry Blossom time in Japan may be enjoyed at home from the sunny south to the northern lakes. The Philadelphia suburbs (the most beautiful in America) are now the first community to be resplendent with Japanese Flowering Cherries.

You may start with a hundred big trees or a dozen little ones. Let us furnish the varieties to give sequence of bloom. Trees for 1925 planting should be ordered in March. The supply is limited.

Six fine trees (3 to 4 feet), \$33.00

12 trees, \$65; 50 trees, \$250; 100 trees, \$500

Same trees smaller (2 to 3 feet) may be had:

6 for \$27.50; 12 for \$54; 100 for \$420

All little trees will be delivered free

Ask for prices on giant and large trees by freight

The Garden Nurseries

Narberth, Pennsylvania

Home of the Wohlert Collection



PRESIDENT SIGNS ALASKA GAME BILL

The Alaska Game Commission Bill, which was reported in the last issue of *AMERICAN FORESTS AND FOREST LIFE* as having passed both Houses of Congress, was signed by President Coolidge on January 15.

CONFERENCE ON STATE PARKS PLANS MEETING IN BLUE RIDGE COUNTRY

John Barton Payne, chairman of the National Conference on State Parks, has announced a meeting of the conference for May 26 to 30 at Skyland, in the heart of the proposed Shenandoah National Park. At that time the delegates will discuss bond issues for the creation of state parks, park sanitation, and the development of permanent and temporary camps. A trip over the Stony Man Mountain section of the region is to be one of the features of the meeting.

INCREASE IN MICHIGAN REFORESTATION PROGRAM URGED

In his annual message to the 1925 State legislature, Governor Alexander Groesbeck pointed especially to the need for reforestation. The following is quoted from his message:

"Improved transportation facilities have opened much of our isolated country and made it easily accessible. As a result, forest fires caused by negligence have increased, indicating that our conservation department must extend our forest-fire organization, complete the land, economic and water-power surveys, and devote much time and more funds to both natural and artificial restoration of our forest covers. The question of reforestation should receive your special attention, and facilities provided to treble at least our plantation work in order that a considerable part of the state acreage may be restored to its former tree fertility during the next two years and an increasing amount each year thereafter."

IN BEHALF OF THE YELLOWSTONE ELK

A campaign to raise \$100,000 by public subscriptions with which to purchase lands to provide winter range and forage for the southern herd of Yellowstone elk in the Jackson Hole country, Wyoming, is being conducted by the Izaak Walton League. If the required sum can be raised, it is the purpose of the League to purchase the lands promptly and to make them available to the Federal Government as an addition to the winter elk refuge near Jackson, Wyoming. The problem of providing winter feed for the elk which range the National Forest and the National Park lands in western Wyoming has long been a sore spot in wild-life preservation. In the July issue of *AMERICAN FORESTS AND FOREST LIFE* the situation was clearly portrayed in an article entitled "The Autobiography of Little Bill Elk," an article which attracted wide attention and was given wide reprint distribution.

In years past a good many elk have perished in this region because of the absence of food in the lower country, to which they are driven in the winter time by heavy snows. The winter elk refuge has helped that situation, somewhat, but after an intensive study by the Forest Service, the Biological Survey, and the National Park Service, it was found that additional land to the extent of some 3,000 acres, adjoining the refuge in Jackson Hole, should be acquired in order that winter feed would always be available to the elk during extremely severe weather. Repeated efforts to have Congress appropriate money for this project have failed, and it will be gratifying to all wild-life conservationists to have the needed area acquired through the constructive efforts of the Izaak Walton League.

ARKANSAS FORESTRY BILL INTRODUCED

On January 20 an act to establish a State Forestry Commission was introduced in the General Assembly of the State of Arkansas, to be made up of seven members, including the Commissioner of Agriculture,

the Dean of the College of Agriculture of the University of Arkansas, and five citizens of the state, at least three of whom shall be owners of timber land or interested in the manufacture and sale of forest products. The duties of the commission are to employ a State Forester of technical training in forestry, to formulate and effect reasonable rules and regulations for preventing and suppressing fires, and to carry on research and educational work in forestry.

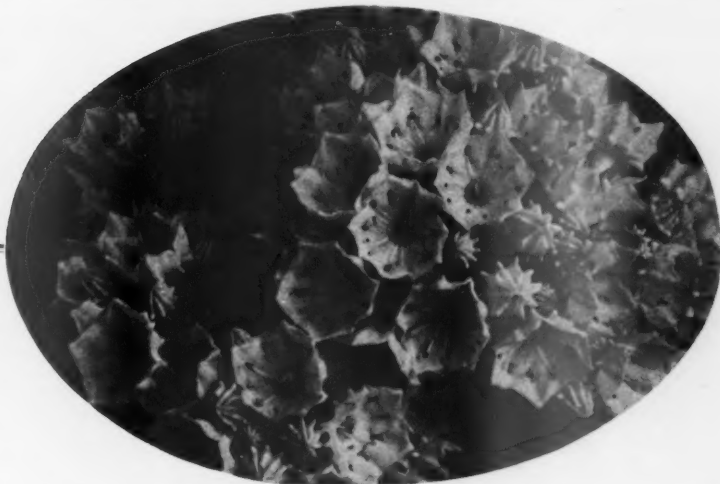
This bill has the support of Governor Tom J. Terral.

NEW YORK GUARDS AGAINST GYPSY MOTH

One hundred and fifty men are engaged in the scouting work in the gypsy moth barrier zone area in eastern New York. Important points of activity have been towns bordering Lake Champlain on the west, Rensselaer, Columbia, and Dutchess counties. To date, the presence of the insect has been discovered in twelve places. The early uncovering of these colonies, while eradication at a reasonable cost is possible, is an important factor in the effort of the Conservation Commission to keep this serious insect pest out of the state.

NEW FOREST EXPERIMENT STATION BILLS

Both California and Pennsylvania will have Federal forest experiment stations, if bills introduced by Representative Lineberger and Senator Shortridge, of California, and Senator Pepper, of Pennsylvania, are passed by Congress. The Pennsylvania bill seeks to establish a forest experiment station to cover the State of Pennsylvania and adjoining States for the purpose of conducting experiments in timber growing and forest protection. It authorizes co-operation with state, county, municipal, university, and private agencies. The California bill is nearly similar in its terms. Each bill would appropriate \$50,000, to be available immediately.



Lovely Woodland Scenes for Your Estate

The Glory of the Woods, the ever-charming Mountain Laurel (*Kalmia*), and the Great Laurel (*Rhododendrons*) need in the future not be confined to the woods alone. For years I have collected stock shipped direct to customers from North Carolina in carload lots. Enthusiastic reports prove how thoroughly satisfactory such stock is, and I assure you that it will be handled at the shipping end in such fashion as to cause you to feel satisfied as well.

For a typical example here is a combination that I can offer you at the special price of \$300 f. o. b. shipping point, North Carolina:

100 <i>Kalmia latifolia</i> , 1 to 2 feet	\$300.00	100 <i>Rhododendron maximum</i> , 2 to 3 feet
100 <i>Kalmia latifolia</i> , 2 to 3 feet		100 <i>Rhododendron maximum</i> , 3 to 4 feet

This is merely a suggestion. I can make up any desired combination of *Kalmia*, *Rhododendrons* in three varieties, *Andromeda*, and *Leucothoe*, as well as *Azaleas*, ferns, and other woodland plants. I issue a special price list of such collected material and will be pleased to mail it free on request.

No Woodland Complete Without Ferns

There are ferns for sun or shade, tall growing ones and dwarfier ones, ferns for every nook and situation imaginable. Among our native hardy plants ferns stand alone for dependability, adaptability, and many other desirable characteristics. Either one of collections below will give the greatest satisfaction in the situation mentioned.

Collection No. 1

For open sun culture

- 35 fine clumps for \$5.00
- 5 *Asplenium Filix-foemina*, 2 to 3 ft.
- 5 *Onoclea Struthiopteris*, 2 to 4 ft.
- 5 *Osmunda Claytoniana*, 2 to 3 ft.
- 20 *Dicksonia punctilobula*, 1 to 2 ft.

Collection No. 2

For dry, shady places

- 35 fine clumps for \$5.00
- 10 *Aspidium acrostichoides*, 1 ft.
- 10 *Aspidium marginale*, 1 to 2 ft.
- 10 *Dicksonia punctilobula*, 1 to 2 ft.
- 5 *Osmunda Claytoniana*, 2 to 3 ft.

Trillium—a Woodland Gem—by the Thousands, at Low Cost

Trillium Grandiflorum is one of our most charming natives, procurable at \$30 per thousand for the large flowering variety. A few thousand of these scattered at random through woods and meadows will transform them into a delightful sight in early spring.

Many acres of choicest specimen nursery stock are available here at Southwick. I specialize in broad-leaved native evergreens, *Azaleas*, and all those forms of plant life that make the American woods and meadows the charming places they are. Please ask for general catalog, which will gladly be mailed upon request, together with the catalog of collected material already mentioned above. We solicit inquiries from those interested in specific plant material, or desiring substantial quantities of either collected or nursery-grown stock.

Edward Gillett, Fern and Flower Farm, 7 Main Street, Southwick, Mass.





Piping Rock Country Club, Locust Valley, L. I.
Equipped with Aten Sewage Disposal System.



Mr. Morgan's Residence, Wheatley Hills, L. I.
Equipped with Aten Sewage Disposal System.

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a city building by installing an

ATEN SEWAGE DISPOSAL SYSTEM

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Allows free and continuous use of wash-stands, sinks, toilets, bath tubs, laundry tubs, showers, etc. The septic tanks are made of concrete reinforced wire forms. Adapts itself for future extensions to other buildings. Can be installed by unskilled labor without expert supervision. Nothing to get out of order. Plans and specifications submitted through your architect, your engineer, or direct.

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The Ideal Garden Fertilizer

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LARGE SHADE TREES

in the larger easily portable sizes are especially rare this year. Leading nurseries in America have few in sizes 2 to 3 inch caliper to sell for large park and estate plantings.

You may order from us now.

LARGE NORWAY MAPLES AND THE BETTER EVERGREENS

The actual property value and your own comfort will be greatly increased by fine trees. There is no better investment.

Write today

HARRISON'S NURSERIES
BERLIN, MARYLAND

SOUTHERN FORESTRY CONGRESS

A complete committal on the part of Governor-elect Tom J. Terrall, of Arkansas, to a law embodying a thorough State Forest policy for his state characterized the opening of the Seventh Southern Forestry Congress at Little Rock on January 19.

The first day, following the addresses of Governor Terrall, Mr. W. D. Tyler, of Dante, Virginia, and President J. S. Holmes, of Raleigh, North Carolina, was given over to discussion of State Forestry legislation.

The second-day session was opened with presentation of The American Forestry Association's program for the purchase of Eastern National Forests, by Shirley W. Allen, Forester of the Association. Following this, J. B. Woods, of the Long-Bell Lumber Company of Kansas City, discussed Louisiana and Arkansas hardwoods, bringing out, by means of this paper and discussion, a good deal of information on the rate of growth.

The growth of the paper and pulp industry in the South occupied a good deal of the time during the second day. Papers were read by R. W. Fannon, of Green Bay, Wisconsin, and Vance P. Edwards, of the Forest Products Laboratory, Madison, Wisconsin. Following them Mr. J. H. Allen, of St. Louis, talked on the future of southern paper production.

A number of resolutions were adopted by the Congress, prominent among which were those urging co-operation to increase appropriations under the Clarke-McNary law, favoring the commission form of State Forest organization, and fully endorsing The American Forestry Association's program as outlined in the McNary-Woodruff Bill.

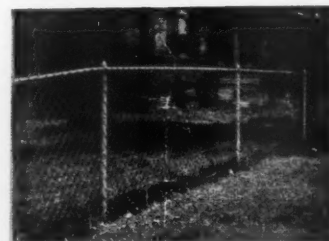
The officers elected for the coming year were H. L. Tilghman, president, Sellers, South Carolina; Dr. A. C. Millar, Little Rock, Arkansas, vice-president; W. K. Williams, Crossett, Arkansas, secretary; A. B. Hastings, Charlottesville, Virginia, treasurer, and W. D. Tyler, Dante, Virginia, chairman executive committee.

The meeting place chosen for next year is Richmond, Virginia.

STATES AGREE ON DEVELOPMENT OF DELAWARE RIVER

A compact recently made by the States of New York, New Jersey, and Pennsylvania defines the rights of each in the waters of the Delaware River, which forms the boundary between them. It gives to each state the right to develop tributaries within its own borders in accordance with its own regulations governing such matters, but puts a restriction on the total which may be developed.

Among other important provisions are rules of sanitation and a policy for forestation on the Delaware watershed, and for hydro-electric development of power. A permanent commission to approve of projects and to observe their operation is provided for.



**FENCE
FOR
EVERY PURPOSE
ROSE ARCHES
TRELLIS**
BROOK IRON WORKS INC.
37 BARCLAY ST. N.Y.

English Portable Hurdle Fence



of rough split chestnut, in sections 8 ft. 3 in. long, making a fence 4 ft. high. Suitable for Horses, Cows, Sheep, and Pigs or for general use. A touch reminiscent of English Country Estates, dividing adequately without disfiguring the landscape.

ROBERT C. REEVES CO.

187 Water Street New York City

RAIN

When, Where and
as long as you want it



Send
for
this book
—it's
Free!

If you have ever wished for rain, then you will be interested in our new book, "Rain." It tells a lot of new facts about watering—how to get real results in your garden or lawn with less labor. Whether your place is small or large, the book contains many valuable suggestions. When writing for your copy, today, mention whether you are interested in lawn or garden watering.

The Skinner Irrigation Co.

212 Water St. Troy, Ohio

BETTER LAWNS and GARDENS

BY E-C-VICK

FREE ON REQUEST

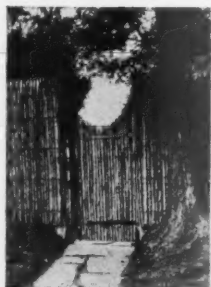
This popular horticultural editor has produced a new, enlarged and revised edition of this authoritative booklet covering the whole range of gardening, simply and concisely stated. "The information on lawns and grass alone is worth dollars."

Flower and Vegetable Gardens, Trees, Shrubs, Planting and proper preparation of the soil for best results are fully covered.

This helpful booklet will enable gardeners to have more beautiful lawns and flower gardens and more productive vegetable and fruit gardens.

A handy reference, full of valuable and practical suggestions. Dollars can be paid for gardening books containing less real information

Atkins & Durbrow, Inc.
A157 Water Street
New York City



WOVEN WOOD FENCE

ROBERT C. REEVES CO.

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N. Y.

Gives privacy and protection; adds a touch of beauty!

Made in France of live chestnut saplings, woven together with wire, reinforced on back with horizontal wood strips, in sections ready to erect. Suitable for screening gardens, service yards, etc., or for eliminating objectionable views. Furnished 6 ft. 6 in. and 4 ft. 11 in. high.

In a word, it will be possible under the compact to develop the latent resources of the Delaware River to their fullest extent for hydro-electric power, for water supply, or for any other purpose. Up to the present time, the water which these resources represent has flowed to waste because of the uncertainty as to what the states might do in the way of conserving them.

A FRENCH PINE WITH AN HONORABLE SERVICE RECORD

Eighty-five years ago, when this maritime pine was forming its first yearly growth rings, the Landes region on the French coast, where it grew, was an unhealthy waste of swamp and sand, says the Forest Products Laboratory. The raising of sheep and goats



yielded a miserable existence to a scanty, malaria-ridden population. Advancing sand dunes threatened to engulf the small amount of land which could still be grazed or cultivated. Today the district is demonstrating the benefits of continuously productive forests which were planted by the French Government.

The scars of old turpentine faces show that this tree was first chipped for resin when it was about 35 years old. Fifty years later, according to the record of the scars and annual rings, it was still producing rosin.

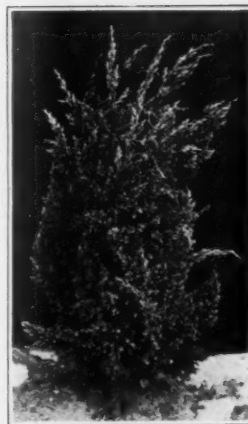
The Landes now supports a population of 1,400,000 on an area of a little less than two million acres, and its advantages as a health resort attract 200,000 visitors each year. From its forest comes a continuous supply of lumber, mine props, and ties; and so thriftily is this small forest managed before cutting that its production of turpentine and rosin is second only to that of the entire United States. The cost of reclaiming and reforesting a little more than one and a half million acres of waste has averaged only \$6.41 per acre.

NEW YORK'S TREE PLANTER GUIDE

A novel instrument has been invented by the Conservation Commission of New York. It is called a tree-planting indicator, and will be a ready help to people who want to plant trees, but do not know what species

Mention AMERICAN FORESTS AND FOREST LIFE—It Helps

Rare Plants from Hicks



Meyers Juniper

EVERGREEN foliage which varies in color from blue-green to bluish-white and red, depending upon the angle of light. 1-foot specimens, \$3 each; 2-foot specimens, \$6 each.

Hicks Yew

Introduced by Hicks Nurseries. Similar in form to the Irish Yew, but is perfectly hardy in eastern Massachusetts. Will produce the English effect in American gardens. 1 to 1½ foot specimens, \$5 each.

Pachystima canbyi

(Mountain Lover.) Exceedingly rare. A beautiful ground cover with green and bronzy-red foliage: plants grow about 6 inches high. \$6.50 for 10.

Other Rare Plants

Many other rare and distinctive plants will be found at Hicks Nurseries. Full information will be given on request to readers of AMERICAN FORESTS.

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RIGHT now you should be planning your next garden. Dreer's 1925 Garden Book contains a complete list of reliable Seeds and Plants, including worthwhile novelties, and advice which will insure your success with them. It offers the best Flower and Vegetable Seeds, Lawn Grass, Roses, Hardy Perennials, Dahlias, etc.

A copy mailed free if you mention this publication

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HARDY NATIVE TREES AND SHRUBS OUR SPECIALTY

For years we have specialized in Azaleas, Mountain Laurel (Kalmia), Rhododendrons, and other broad-leaved evergreens and deciduous shrubs. For 1925 we are better equipped than ever before to serve you with the following:

NATIVE RHODODENDRONS from 1-5', assorted varieties, per 100 and carlots.

KALMIA LATIFOLIA from 1-3', per 100 and carlots.

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to select for given soils. The indicator consists of a card upon which there is a movable circle fastened at the center. The different kinds of soils are given at the top of the indicator, and on the dial the character of material which the tree planter may desire to grow, such as saw timber, pulpwood, cross-ties, etc. In using the indicator the prospective planter turns the arrow, indicating the kind of forest product which he wants to grow, so that it will point to the kind of soil available for his planting. He then reads the numbers opposite a star on the lower part of the revolving disk, and by use of a legend these numbers indicate the species of trees which can be planted successfully upon the kind of soil available and produce the desired material. It is expected that the tree indicator will be issued in large quantities, and will be of wide aid to land owners in making their own decisions as to what kind of trees to plant upon their soils.

MORE PUBLIC FORESTS URGED

"Ninety per cent of the forest of Canada are publicly owned," declared R. S. Kellogg, secretary of the News Print Service Bureau, at the annual banquet of the Canadian Forestry Association in Ottawa. "Twenty-four per cent of the forest resources are publicly owned in Sweden, thirty-five per cent in France, and fifty-three per cent in Germany. In the United States, however, all but twenty per cent of the forest area is privately owned and controlled. It may be questioned if Canada's percentage is unnecessarily high, but the United States needs a greater proportion of public forests. In Canada, so far, exploitation exceeds the amount expended upon the public forests; in the United States the expense to date exceeds the income. Public forest ownership means public responsibility for timber production."

MISSISSIPPI COMMITTEE SEEKS FORESTRY LAW

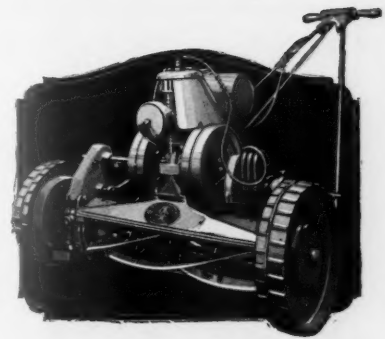
Following a resolution passed by the Mississippi Legislature in its 1924 session, a committee has been appointed by Governor Henry L. Whitfield to investigate means of co-operating with the Federal Government in reforesting the denuded lands of the state. The members of the committee are Charles Green, Laurel; D. H. Foreman, Electric Mills; D. A. McIntosh, Collins, Hugh L. White, Columbia; J. H. Weston, Logtown, and J. B. Bishop, Pinola.

ILLINOIS FORESTRY ASSOCIATION ACTIVE

State Forest administration and other forestry activities will be provided for in the State Department of Agriculture if the bill prepared by the Illinois Forestry Association and presented to the State legislature becomes a law. The department will co-operate with the State University.

The principal features of the bill are provision for fire protection, encouragement of forest culture on private lands, and a plan of handling state forests.

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Copies of the 1924 Index of AMERICAN FORESTS AND FOREST LIFE will be sent to members upon request.

Another measure prepared by the Board of Natural Resources and Conservation calls for an appropriation of \$12,500 to carry on the forest survey work of the Natural History Survey and to provide for the teaching of forestry at the University.

CLUB BUILDS FOREST TRAILS

Construction of 125 miles of trails through the woods of the Adirondack Park was the outstanding feature of the report of the Committee on Trails, Camps, and Shelters, at a recent meeting of the Adirondack Mountain Club. This trail work is about a third as much as that done by the New York State Conservation Commission, and the club members are proud of the showing made by an organization less than three years old. The trails have been laid out in conference with officials of the Conservation Commission, so that they form a most important and valuable extension of the state trail system, which makes the wilderness of the Adirondacks more accessible to hikers and campers.

The committee's report also mentions the construction of two additional open camps on Adirondack trails, bringing the total of these camps built by the club up to seven, all of which are open to the public.

Interest in the conservation and trail work of the club and in its new lodge, now under construction in the Johns Brook Valley, in the heart of the highest Adirondack peaks, has resulted in greatly increased membership.

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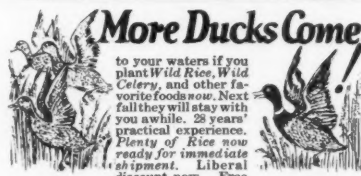
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APPALACHIAN TRAIL CONFERENCE

All devotees of tramping and lovers of the outdoors are being urged to attend an Appalachian Trail project, a footpath along Regional Planning Association of America for inauguration week in Washington. The meetings will be held at the Raleigh Hotel, opening at 2:30 p. m., March 2, and extending through luncheon, March 3. There will be a special dinner conference at 6:30 p. m. the first day.

Increasing interest is being shown in the Appalachian Trail Project, a footpath along the crest of the Appalachian Range from New England to Georgia. Since the plan was first announced, three years ago, by Benton McKaye, through the American Institute of Architects, the New England States report 277 miles of trail maintained, and more opened and scouted. The New York and New Jersey Trail Conference is continuing construction through the Palisades Interstate Park to the Delaware Water Gap.

An interesting write-up of the entire project, by Raymond H. Torrey, was published in the April, 1924, number of AMERICAN FORESTS AND FOREST LIFE.

NEW YORK WOMEN'S CLUBS WILL CELEBRATE CONSERVATION WEEK

During the first week in April the New York City Federation of Women's Clubs, through the leadership of Mrs. Charles Cyrus Marshall, who is chairman of the conservation committee, will celebrate Conservation Week.

On April 3rd a meeting to honor the birthday of John Burroughs will be held at Wanamaker's Auditorium, with Theodore Roosevelt and Congressman John D. Clarke as the principal speakers. On Saturday there will be a luncheon at the Boat House at Bronx Park at which prominent speakers will be heard.

Another feature of the week is a Conservation Essay contest in the public schools, for which two hundred prizes are offered for excellence. Judging from past experience, a very successful Conservation Week is predicted.

OKLAHOMA LEGISLATORS CONSIDER FORESTRY

Without calling a special hearing, the Committee on Agriculture of the Oklahoma Senate reported favorably a bill to establish a State Forestry and Park Commission. The enactment of this bill into law will give Oklahoma a policy of fire protection, reforestation of idle lands, and encouragement to private owners of forest land. It provides further for the acquisition on forest and park lands by the State and calls for an appropriation of \$25,000 annually to carry out the provisions of the bill.

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LAKE STATES COMMITTEE HOLDS MEETING

Among the many interesting subjects dis-
cussed at the meeting of the Advisory Com-
mittee of the Lake States Forest Experi-
ment Station, recently held in Chicago, the
status of forest fires in Michigan, Minne-
sota, and Wisconsin occupied an important
place. Mr. Raphael Zon, Director of the
Station, told those who attended the meet-
ing of the work which the station has ac-
complished during its first year in gather-
ing fire statistics for these states, and he
illustrated by a series of charts, based upon
the best information available, the trend of
the forest-fire menace. According to his
figures, which he said must be considered as
not entirely comprehensive, the forest-fire
menace in general is increasing in the Lake
States. Based upon the number of fires,
all three states show an increase during the
last five years, but in point of area burned
over a decrease is shown for Minnesota
and Michigan. In Wisconsin, however, his
charts showed a big increase in the number
of fires ten acres and over.

Mr. Zon also gave the meeting a review
of the other work which the station has
been conducting during the year. Of con-
siderable interest is its investigation of the
possibilities of jack pine, of which there is
some eight to ten million acres in the Lake
States. Well-stocked stands, Mr. Zon de-
clared, are shown to produce a cord an acre
a year for thirty-five to fifty years, when
the stands become merchantable.

NEW YORK STATE FORESTRY AS- SOCIATION

At the 13th annual meeting of The New
York State Forestry Association, held in
Albany, John D. Clarke, well known for his
work in connection with the Clarke-Mc-
Nary Forestry law, was elected to the ex-
ecutive committee. Among the new vice-
presidents appear the names of former State
Senator Ellwood M. Rabenold, former Con-
servation Commissioner Ellis J. Staley,
and the present Conservation Commissioner,
Alexander Macdonald. J. R. Simmons, who
had served the Association as Secretary and
Forester since 1919, was re-elected for the
year 1925.

A resolution was adopted during the morn-
ing business session "endorsing the move-
ment for extension of the National For-
ests," as outlined in the December issue of
AMERICAN FORESTS and FOREST LIFE and
in accordance with the bill authorizing ap-
propriations appearing in that issue.

Resolutions were adopted covering enter-
prises in state forest policy, including fur-
ther extension of the fire protective system
and the creation of new state forests as
game refuges and experimental forest areas.

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FIRE ONE YEAR OLD STILL BURNING

Supervisor Chester E. Jordan, of the Santa Barbara Forest, in California, is not one to give up on a fire, but this one was a little too much. "It is one that started on September 1, 1923," he writes, "and you may be surprised to know that it is still burning; and you may also wonder why we don't put it out. You may consider it poor business on the part of Santa Barbara to allow its fires to burn that long, but we consider this job a little too big for us. It is not burning in brush, nor in timber-covered areas, but is burning different mountains along the Santa Ynez range.

"The oil shale got on fire when the main fire went through the country, and a great many of the high cliffs along the Santa Ynez River have been reported burning ever since. Last week, while Ranger Dunne was camped near Mono Flats, he heard a funny crackling on the side of the mountain; he looked up and saw some buckwheat ignited where the fire broke through from one of these oil-shale burns, and if it had not been that this area was well burned over last summer we would surely have had another forest fire.

"This fire was originally fought for five weeks and burned over 50,000 acres."

OH, SUGAR PINE!

The Annual Cruise, published by students of the Forestry Department of the Oregon Agricultural College, offers the following letter straight from the wood.

"DEAR HAZEL:

"I pine fir yew. Alder day and night I long to cedar apple of my dreams, which is yew. I wish my boss wood give me a long leaf, so I could graft you in my palms again. He butternut refuse me or I will lilac saxifragrance to see yew.

"I ain't poplar here. I met Cherry at the beech yesterday and she said if I didn't leaf her, redwood lick me, and if redwoodn't then her dogwood. She said, 'You prune, if you don't quadrifolia I'll sycamore dogs on yew.'

"Oh, Hazel, I'm nutty over yew! I wood scrub oak, and spruce up fir yew forever. When your elders say yes to me, won't it be grand fir us?"

"Oh, my Hazel, I a door yew.

"From your lonesome,

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Make your place attractive to friends with wings and you are availing yourself of the cheapest labor in the world, with all the music and beauty thrown in.



DEVICES TO ATTRACT THE BIRDS

have been created largely by one man, who so thoroughly understands our bird neighbors that he has developed many ways to attract many birds. The story of his invitations to nest and feed is an attractive booklet entitled YOUR BIRD FRIENDS and How to Win Them, by Joseph H. Dodson, President, American Audubon Association, which every reader of AMERICAN FORESTS should have. It is sent free upon request.

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such as you can make of your own place will attract over a hundred varieties of birds through the year—woodpeckers, chickadees, nuthatches, snow birds in winter, with scores of others; in the spring and fall migrating seasons, the little kinglets, the warblers, and quiet native sparrows, and the summer with its countless varieties of familiar and strange residents to offer new surprises.

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April 27 to May 3, 1925

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American made, it is better than many imported binoculars costing far more. Handsome finish. Will last a life-time. Magnifies 5 times. Makes objects invisible to naked eye big and bold. Thousands used by tourists, campers, Boy Scouts, hunters, fishers.



Binascope A, illustrated, \$5; Binascope B, pupillary adjustment, \$7; at your dealers or direct postpaid. Money-back guarantee.

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FORESTRY TRAINING

In the Heart of the Rockies

The Colorado School of ForestryA Department of Colorado College
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Four and five-year undergraduate courses and a two-year graduate course in technical forestry, leading to the degrees of Bachelor of Science in Forestry and Master of Forestry.

Forestry teaching in spring and fall at Manitou Forest (a 7,000 acre forest belonging to the School) and the winter term at Colorado Springs.

Write for announcement giving full information.

HARVARD FORESTPetersham,
Massachusetts

A forest experiment station of two thousand acres, 14 years under management on a sustained yield. Large variety of silvicultural treatment in progress. Logging, milling, and marketing annually carried on. Extensive plantations established from the Forest nursery.

Competent graduate students accepted as candidates for degrees of M. F. or D. S.

RICHARD T. FISHER
Director

PUT THIS MAGAZINE IN THE SCHOOLS

One of our members, Mrs. Ida Reed-Smith, of Illinois, makes a valuable suggestion. She herself sends her magazine each month to her Alumni High School and she urges others to "do likewise." If AMERICAN FORESTS AND FOREST LIFE could be sent to every High School in the country, it would be placed "where it will do the most good in influencing the minds and actions of the America of tomorrow."

How about *your* High School?

University of Maine

Orono, Maine

The Forestry Department offers a four-years' undergraduate curriculum, leading to the degree of Bachelor of Science in Forestry.

Opportunities for full technical training, and for specializing in forestry problems of the northeastern States and Canada.

Eight-weeks' camp-course required of all Seniors in Forestry, in practical logging operations in northern Maine, under faculty supervision.

For Catalog and further information address

JOHN M. BRISCOE
Professor of Forestry

MASSACHUSETTS MAN ENCOURAGES TOWN FORESTS

With an offer to donate \$150 to those Massachusetts towns which acquire 100 acres of land suitable for town forests, Z. Marshall Crane, of Dalton, Massachusetts, has thrown valuable support to the movement started by the Massachusetts Forestry Association. The offer was made at the instance of the newly organized Berkshire Forestry Association of Pittsfield, Massachusetts, which has 35 charter members.

AN ACCOMMODATING FIRE

A fire which acted as its own lookout and reporting agency, on the Klamath National Forest last summer, has just been brought to light.

The brush and other debris around one of the donkeys used in a lumbering operation had been piled in accordance with the provisions of the state fire law. One of the piles was along the trail used by the lumberjacks in going to camp. The electric whistle cord was also along this trail and near a brush pile. A careless lumberjack apparently dropped a match or cigarette (this was early in the season, before smoking had been prohibited on the sale area) in this brush pile on his way to camp.

When supper was about finished that night the men were interrupted by sharp blasts from a donkey whistle, which meant fire. Scaler Godfrey and crew of men rushed to the donkey and found that the burning brush pile had shorted the electric whistle cord, and this in turn caused the whistle on the donkey to sound the alarm. The result was an extremely low elapsed-time record for discovery and report of the fire.

CONNECTICUT FORESTRY ASSOCIATION CELEBRATES THIRTIETH ANNIVERSARY

The Connecticut Forestry Association, at its thirtieth annual meeting, held in Hartford on January 31, endorsed a comprehensive state forest, park, and wild life conservation program which had been formulated by the executive committee in co-operation with a large number of civic, trade, agricultural, and outdoor organizations. This program which has been published and submitted to the General Assembly, includes the following features:

The building up of an adequate system of state forests, game reserves, and parks, by means of adequate appropriations which should for the next two-year period not be less than \$700,000.

The strengthening of the forest protective system of the state by added legislation, dealing with fire permits, forest protective associations, insects and fungus diseases of forest trees.

Providing for increased co-operation with forest land-owners through the medium of the Extension Service at the Connecticut Agricultural College and the establishment of a state forest nursery for the growing of forest planting stock.

Providing for reorganization of methods of taxing forest lands, so that forest owners may not be penalized when they attempt to practice forestry, as is possible under the present system.

Providing for the better care of shade trees, particularly on state highways.

A resolution was also adopted heartily endorsing the Eastern National Forests Program of The American Forestry Association.

Officers elected for the following year are Henry S. Graves, President; T. S. Woolsey, Jr., Vice-President; Curtis H. Veeder, Treasurer, and P. L. Buttrick of New Haven, Secretary.

WYOMING WOMEN'S CLUBS URGING FORESTRY LAW

Under the leadership of Mrs. A. C. Meloney, chairman of the Legislative Department of the Wyoming Federation of Women's Clubs, a bill providing for a State Forest Commission has been drafted for presentation to the Wyoming Legislature.

The chances for action on the bill this spring are considered good.

STUDENTS WILL TOUR EUROPEAN FORESTS WITH DR. SCHENCK

Dr. C. A. Schenck, former director of the Biltmore Forest School, will guide the party of students from the Pennsylvania State Forest School at Mount Alto on their annual tour of the forests of Germany and Switzerland.

Dr. J. V. Hofmann, former Director of the U. S. Wind River Forest Experiment Station, will have charge of the party, which will consist of not more than twenty men and will include as many members of other forest schools as can be accommodated.

The party will sail from New York on March 28, and Dr. C. A. Schenck will conduct lectures in silviculture and management on the outward voyage, continuing the series of lectures given at Mount Alto early in January.

MISSOURI CONSIDERS FOREST LEGISLATION

The Missouri Forestry Association, of which Dr. Herman von Schrenck is president and Frederick Dunlap is secretary, are sponsoring a bill, to be introduced in the Missouri Legislature, for the appointment of a Board of Forestry, whose duties shall be to promote the practice of forestry in Missouri, to conduct research on forest management, devise measures for the control of fires, and to acquire and administer State Forests.

OREGON SCHOOL OF FORESTRY

Located in the center of the last great stand of virgin timber in the United States.

Offers four and five year courses in professional forestry, logging engineering, and lumber manufacture.

Field work in the magnificent Oregon forests, easily accessible from the school. The largest logging operations and lumber manufacturing plants near at hand.

Summer work readily obtainable in the Forest Service, in logging camps, and in the mills.

For catalog and further information, address

G. W. PEAVY, Dean
Oregon State
Agricultural College
Corvallis, - - Oregon

The New York State College of Forestry Syracuse University Syracuse, N. Y.

THE State Forest Experiment Station of ninety acres at Syracuse, the Charles Lathrop Pack Demonstration Forest of 1,000 acres at Cranberry Lake (home of the Sophomore Summer Camp), three other field experiment stations, the Roosevelt Wild Life Forest Experiment Station, a modern pulp mill, a well-equipped sawmill, a complete dry-kiln plant, the biological laboratories, and an excellent reference library afford unusual opportunities for investigative work. A four-year course in Pulp and Paper Manufacture and a short course each spring in Dry-kiln Engineering and Lumber Grading are regularly given. In addition to the regular four-year undergraduate courses, special courses are offered that lead to the degrees of Master of Forestry, Master of City Forestry, Master of Science, Doctor of Philosophy, and Doctor of Economics.

FRANKLIN MOON, Dean

A WAYSIDE TREE

WHEN hurrying, hurrying by,
Who sees against his sky,—
As though 'twere etched by master hand,—
A towering eucalyptus tree,
Upstanding, smooth of limb,
Its head where wind and cloud run free?

This friend of man from o'er the sea,
Whose leaves, like scimitars all downward
hung,

Drip dew on thirsting ground,
Knows earth, yet has the upward reach
And brother to the stars would be.

—Annie Dolman Inskeep.



50,000 Firebrands

(Continued from page 143)

equally needed profession of law enforcement. . . . If their presence and efforts do not forestall the crime, they must bring in their man and achieve such an understanding in community and court that punishment is a lesson, not a farce.

It is an indefensible system that trains thousands of men to chase and fight fires, but virtually no men to chase and fight those who build the fires. How long would our cities stand unburned if on their firemen rested also all responsibility for the observance of laws governing fire hazard and arson, for detecting violations, and for bring-

School of Forestry University of Idaho Moscow, Idaho

Offers thorough training in Practical Forestry, preparing for federal, state and private work.

Four and Five Year Courses, leading to the degrees of Bachelor of Science in Forestry and Master of Science in Forestry respectively.

Opportunity is given to specialize in General Forestry, Logging Engineering, and Range Management.

No tuition is charged and other-wise expenses are the lowest.

Large logging and milling operations, important wood-working industries, also extensive federal, state, and private forests near at hand. Excellent opportunity for summer employment.

For further particulars address

Francis G. Miller, Dean

Yale School of Forestry

Established in 1900

A graduate department of Yale University, offering a two years technical course in forestry leading to the degree of Master of Forestry.

Special opportunities are provided for advanced work and research in the laboratories and the school forests.

For further information and catalog address

THE DEAN OF THE
SCHOOL OF FORESTRY
New Haven, Conn., U. S. A.

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WANTED

10,000 members to nominate 10 of their friends for membership. It will take but a few minutes' time of each member and will yield splendid returns for the time and effort invested.

Enlist in the nomination army.

Send in your list now before you forget it.

If you can think of more than 10, so much the better. If you cannot think of 10, send in as many as possible, **BUT BE SURE TO SEND IN SOME.**

THE AMERICAN FORESTRY
ASSOCIATION

1523 L Street N. W. Washington, D. C.

The makers of
Ipana Tooth Paste
believe in protect-
ing and preserving
forests as well as
teeth and gums.

IPANA TOOTH PASTE

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40 Rector Street New York

ATTENTION, FORESTERS!

AMERICAN FORESTS AND FOREST LIFE will print, free of charge in this column, advertisements of foresters wanting positions, or of persons having employment to offer foresters.

POSITIONS WANTED

FORESTER—Game keeper, 10 years' experience with German Forest Service; Citizen, understands tree-planting, reforestation, treatment of diseases, making timber suitable for cutting; also surveying and road building; raising of pheasants, hunting, training of dogs, etc.; desires to return to forestry or as gamekeeper, either state or private. Address Box 9, care AMERICAN FORESTS AND FOREST LIFE, Washington, D. C. (3-4-5)

FORESTER—Norwegian, well educated, 11 years' experience in different branches of forestry, wants a position. Address Box 10, care of AMERICAN FORESTS AND FOREST LIFE, Washington, D. C. (3-4-5)

ing all evidence before the courts? . . .

It is fashionable to cite the experience and progress of other nations. I know of none that has succeeded, or is even trying, by pouring in the money of its forest owners and taxpayers, while the foremost cause of forest destruction is a national propensity. On the contrary, these nations do not have fire except as a negligible accidental rarity.

It is unthinkable that fire can be reconciled with success by calling on the same population for funds to put out their fires and recoup their losses; or, since it is not inspired by reason, that it will be abolished by intellectual economic argument. It will continue a national menace until the nation's emotional heart is changed by personal appeal that shall reach unsharable individual hope and fear, pride, responsibility, and honor; and until for indifference to human appeal there is swift and human retribution.

Potash—A Newly Found Natural Resource

(Continued from page 159)

ernment should make artificial nitrates, at Muscle Shoals or elsewhere, important as the latter may be.

In the development of this newly found resource, a cheap and plentiful supply of wood may or may not be an important factor. Potash mining, as practiced in both Germany and Alsace, requires comparatively little timbering. Waste materials are used to fill completely the worked-out chambers, and these serve to support the roof. Considerable wood is used, however, for structural purposes in the buildings and refineries which accompany the mines and in the dwellings supplied to the workers by the mining companies.

Conditions attendant upon the possible mining of potash salts in Texas are as yet unknown. Much depends upon the existence of a suitable roof. If mining conditions prove to be like those in Germany, comparatively little wood for timbering will be needed. With the development of potash mining on any considerable scale in Texas, new settlements and towns are bound to come into existence and an increasing demand for lumber is sure to follow.

If, on the other hand, conditions in the Texas potash field prove to be unfavorable as compared with those in Germany—that is, if the roofs of the mines are bad—considerable timbering may be necessary.

"Congratulations. The center spreads that you have been featuring are truly remarkable. We enjoy the magazine at our home immensely. Of the many we receive regularly, none are more thoroughly read than AMERICAN FORESTS AND FOREST LIFE. Needless to say that after reading the magazine we have a better understanding and a keener appreciation of the forests and of forest life. You are doing a splendid work."

—Stuart L. Sweet, Littleton, Colorado.

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MASTER PRINTERS

ECKINGTON PLACE AND FLORIDA AVENUE N. E.

WASHINGTON, D. C.

Association Progress

(Continued from page 167)

attention and bringing home to the reader the lesson of care with fire in the woods. A total of 34,300 posters and 256,000 stuffers were distributed and are being used in all parts of the United States and Canada.

"Direct contact has been established with a great many trade and popular publications which are being supplied with special material on forestry. A number of small prizes,

usually subscriptions to the magazine, have been given in public school and women's club essay contests on forestry, and a great deal of material of special character has been prepared and supplied, upon request, to school teachers and to men and women who were called upon to lecture or write on forestry. The service given in this direction is bringing about a steady increase in the demand for it, until the problem of

meeting it with the present force is becoming a serious one.

"A greater volume of newspaper publicity has likewise been obtained during the year. . . . During the present year an expansion of this work has been provided for.

A summary of the Association's financial operations for the year, as audited by Rankin & Company, of New York, is printed below:

Balance Sheet as at December 31, 1924

ASSETS		LIABILITIES AND CAPITAL	
Cash:		Accounts Payable	\$2,464.53
General Funds	\$2,657.31	Reserves:	
Special Funds (Foresters, Life, Sinking, and Permanent)	8,851.51	Prepaid Memberships	\$18,670.69
Petty Cash	10.00	Permanent Funds	15,335.00
	<u>\$11,518.82</u>		<u>34,005.69</u>
Investments:		Surplus:	
Jane Smith Bequest	\$5,000.00	Balance January 1, 1924	\$34,109.43
Life Memberships	8,119.77	Deduct:	
Permanent Funds	14,600.00	Net loss for the Year Ended December 31, 1924	2,697.69
General Investments	8,648.98		<u>31,411.74</u>
Accounts Receivable	36,368.75		
Inventories	4,606.25		
Prepaid Expenses	3,250.40		
Furniture and Fixtures	349.53		
Suspense	4,004.28		
	<u>7,783.93</u>		
	<u>\$67,881.96</u>		<u>\$67,881.96</u>

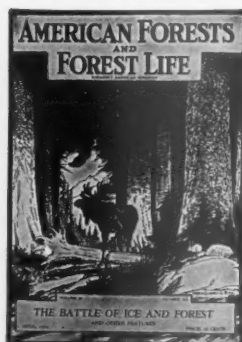
Income and Expense Account for Year Ended December 31, 1924

EXPENSE		INCOME	
Magazine	\$30,751.32	Membership Dues	\$57,124.08
Salaries, Office Expenses, and Supplies	31,706.57	Miscellaneous Magazine Sales	1,423.13
Membership Solicitation	9,284.93	Advertising (Net)	8,923.64
Publicity	814.89	Interest	2,407.84
Annual Meeting	953.42	Donations	4,379.11
Miscellaneous	2,039.23	Miscellaneous	1,337.68
Surplus for the Year, Exclusive of Forester's Office	45.12	Forester's Fund	1,157.45
Forester's Office	3,900.26	Loss on Forester's Office	2,742.81
	<u>\$79,495.74</u>		<u>\$79,495.74</u>

NOMINATE YOUR FRIENDS FOR MEMBERSHIP

Fill in the last line and mail the Application blank to a friend. He will appreciate the courtesy

Application for Membership in The American Forestry Association



American Forests and Forest Life is sent to all except Annual Members.

The AMERICAN FORESTRY ASSOCIATION
1523 L Street N. W., Washington, D. C.

I hereby apply for membership in The American Forestry Association and enclose \$_____

INDICATE CLASS OF MEMBERSHIP DESIRED

- ☐ Subscribing membership, per year, including Magazine.....\$4.00
☐ Contributing Membership, per year, including Magazine.....10.00
☐ Sustaining Membership, per year, including Magazine.....25.00
☐ Life Membership (no other dues for life), including Magazine.....100.00
☐ Patron Membership (no other dues for life), including Magazine.....1,000.00
☐ Annual Membership, without Magazine.....1.00

Canadian Postage 25c extra; Foreign 50c extra, on Subscribing Memberships

PLEASE LETTER OR TYPE NAME AND ADDRESS

Name.....

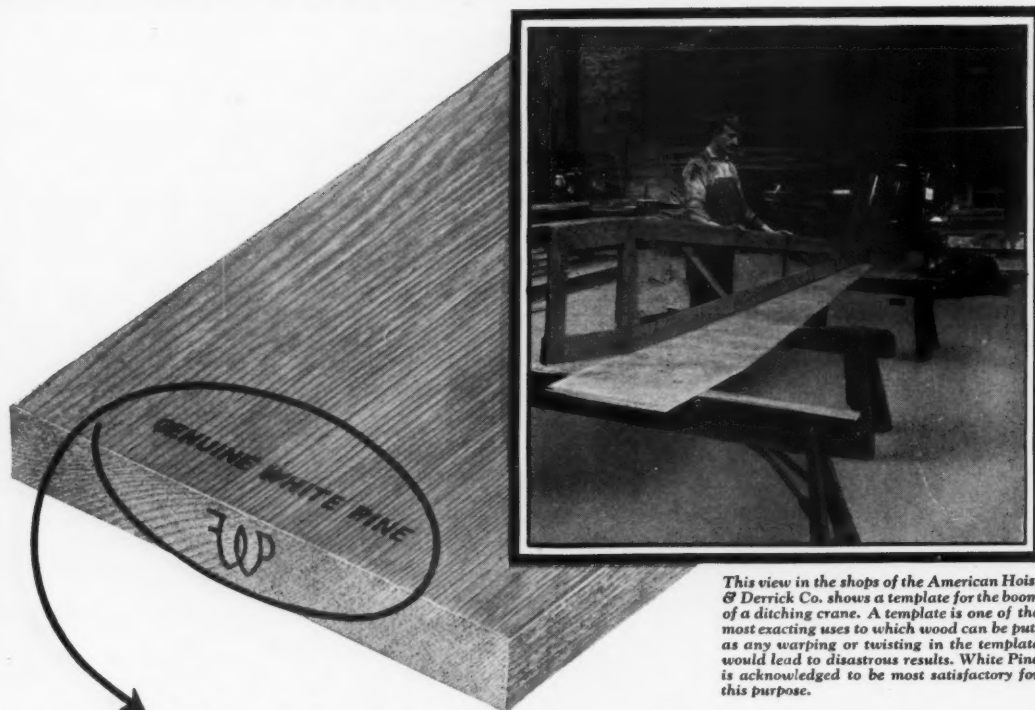
Street.....

City and State.....

Business or Profession.....

Nominated by.....

March, 1925



This view in the shops of the American Hoist & Derrick Co. shows a template for the boom of a ditching crane. A template is one of the most exacting uses to which wood can be put, as any warping or twisting in the template would lead to disastrous results. White Pine is acknowledged to be most satisfactory for this purpose.

This Mark is Your Assurance That You are Getting Genuine White Pine

THERE has never been any question about the value of White Pine for foundry patterns or templates, for fine carvings or exposed architectural detail.

No other wood possesses the peculiar combination of qualities required for these specialized uses. It works easily, with the grain or across the end of the grain; it holds its shape without warping or twisting or "grain raising," it is durable under exposure to the weather.

Yet when White Pine is ordered there is often a good deal of uncertainty as to whether *genuine* White Pine is actually delivered.

The reason is that not all lumber

sold as White Pine is *Genuine White Pine* by any means. It looks very much like White Pine; it is all good lumber for certain uses. But the pattern maker who may spend months in building a pattern from which thousands of expensive castings are to be made can't afford to take a chance. The architect who specifies an elaborate job of exposed millwork must be sure of his wood. The labor spent and the service expected are too far out of proportion to the amount of lumber involved to permit the use of anything short of *Genuine White Pine*.

TO meet this situation and as an added service to the lumber user the Weyerhaeuser mills are now marking each piece of the better grades of White Pine with a species-mark, "*Genuine White Pine*."

If you are a pattern maker requiring a special selection of *Genuine White Pine*—or just an ordinary householder wanting some of the real thing for some special job you want

to do—you can go down to your local lumber yard and sort out as much or as little as you need.

You can look at the mark and know that you are getting the value you pay for—each piece guaranteed *genuine* at its source—made, seasoned and finished under the Weyerhaeuser standards of fine manufacture.

You will find, too, that your lumber dealer welcomes the Weyerhaeuser species-mark on his *Genuine White Pine* as proof of the integrity of his service to you. It is an added assurance to him that his *White Pine* will give you complete satisfaction.

Where special conditions require it, the Weyerhaeuser organization offers the co-operation of the Weyerhaeuser Service Man, who will advise with you on the kinds and grades best adapted to your requirements—and then see that you get them.

If your local lumber dealer cannot supply you with Weyerhaeuser Guaranteed—*Genuine White Pine*—write us.

WEYERHAEUSER FOREST PRODUCTS SAINT PAUL • MINNESOTA



Producers for industry of pattern and flask lumber, factory grades for remanufacturing, lumber for boxing and crating, structural timbers for industrial building. And each of these items in the species and type of wood best suited for the purpose.

Also producers of Idaho Red Cedar poles for telephone and electric transmission lines.

Weyerhaeuser Forest Products are distributed through the established trade channels by the Weyerhaeuser Sales Company, Spokane, Washington, with branch offices at 208 So. La Salle St., Chicago; 220 Broadway, New York; Lexington Bldg., Baltimore; and 2694 University Ave., St. Paul; and with representatives throughout the country.





Reproduction from a painting of the estate of R. R. Colgate, Sharon, Conn., by Frank Swift Chase © The D. T. E. Co., Inc., 1925

\$1,250,000.00 business in saving trees during 1924 by The Davey Tree Expert Co. *An increase of 25% over 1923*

IN 1906 the business of The Davey Tree Expert Company was approximately \$10,000.00, with John Davey in personal charge training his men in his wonderful new science. In 1924 the business reached a total of \$1,250,000.00 for the year.

In 1906 John Davey had only a dozen men—today the Davey organization numbers more than 500 and is national in scope.

During 1924 The Davey Tree Expert Company treated in this one year more than 98,000 trees—for more than 6,000 clients between Boston and Kansas City and in California.

Of these clients 75% paid the Davey Company less than \$200 each. The smallest amount paid by any one client was 90c—the largest was \$15,528.62.

These clients include owners of private homes and country estates; schools, colleges, and universities; city parks, golf and country clubs; churches, hospitals, and philanthropic homes; cemeteries; federal, state, and county institutions; manufacturing and insurance companies, and other corporations.

This business was founded on the genius, love, and courage of John Davey, who gave to the world the wonderful Science of Tree Surgery. It was organized, built up, and managed by his son, Martin L. Davey, with the co-operation of a group of unusual men. The Davey organization today is made up of men of such high personal qualities, ability, and integrity that John Davey's slogan has become a living force, "Do it right or not at all."

THE DAVEY TREE EXPERT CO., Inc., 98 City Bank Bldg., Kent, Ohio
Branch offices with telephone connections: New York, 501 Fifth Ave., Telephone Murray Hill 1639; Albany, Volckert Bldg.; Boston, Massachusetts Trust Bldg.; Philadelphia, Land Title Bldg.; Baltimore, American Bldg.; Washington, Investment Bldg.; Pittsburgh, 331 Fourth Ave.; Buffalo, 110 Franklin Street; Cleveland, Hippodrome Bldg.; Detroit, General Motors Bldg.; Cincinnati, Mercantile Library Bldg.; Louisville, Todd Bldg.; Indianapolis, Lombard Bldg.; Chicago, Westminster Bldg.; St. Louis, Arcade Bldg.; Kansas City, Scarritt Bldg.; Minneapolis, 636 Andrus Bldg.; Montreal, 912 Insurance Exchange Bldg.

Among prominent persons and institutions served by Davey Tree Surgeons are the following:

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HON. ABRAM I. ELKUS
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HON. HERBERT C. HOOVER
IDLEWILD COUNTRY CLUB
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KELLAND
UNION COLLEGE
MRS. C. A. WEYERHAEUSER
F. EDSON WHITE

JOHN DAVEY
Father of Tree Surgery
Reg. U. S. Pat. Off.

Attach this coupon
to your letterhead
and mail today



The Davey Tree Expert Co., Inc.
98 City Bank Bldg.
Kent, Ohio

Gentlemen: Without cost or obligation on my part, please have your local representative examine my trees and advise me as to their condition and needs.

DAVEY TREE SURGEONS

Every real Davey Tree Surgeon is in the employ of The Davey Tree Expert Co., Inc., and the public is cautioned against those falsely representing themselves. An agreement made with the Davey Company and not with an individual is certain evidence of genuineness. Protect yourself from impostors. If anyone solicits the care of your trees who is not directly in our employ, and claims to be a Davey man, write headquarters for his record. Save yourself from loss and your trees from harm.



A Golden Hillside From China

China, contributor of beautiful flowering shrubs, in the gorgeous ROSA HUGONIS has given us now her own best—"the Golden Rose of China."

Fresh splendor may now cover the hillsides, giving new charm to the woodland foreground. You may revel in the glory of a small or large planting.

ROSA HUGONIS has "captured the garden lovers of America," according to a writer at the Arnold Arboretum, which acquired the first plants in this country. He adds: "It should be the most popular species in the country."

The firm who believed in ROSA HUGONIS has now created the first large collection in America, from which strong plants for mass planting are now available in quantity, as well as extra-size plants for specimen display.

This spectacular and exquisite rose, indispensable to the rose-lover as a specimen lawn flowering shrub, so excels in mass planting of large areas that its blaze of soft yellow glory during the month of May offers a new thrill to lovers of pure beauty.



Like dainty yellow hollyhocks, the long arching sprays make rare and exquisite decorations. The bush grows symmetrically, about six feet high and equally broad, with branches transformed into masses of flowers that hide the leaves during the blooming season.

ROSA HUGONIS is fully described and pictured in our new *Star Guide to Good Roses*—a catalog that's more than a catalog, a short cut to rose success—100 pages, 18 in full color, with the first listing by experts of the 100 best roses in America. It is now ready, and will be sent free upon request. Write for it today, and ask for special information on mass planting.

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STAR ROSE GROWERS BOX A WEST GROVE, PA.



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